

**Argus700 Series 2.**  
Multipower  
Multispeed  
Multichoice  
Multiprocessor.  
FERRANTI  
Computer Systems

## NEWS IN BRIEF

14 redundant  
at Infotech

BLAMING the overall UK recession, training and conference session organiser Infotech has made 14 staff redundant at its Maidenhead headquarters. The firm said that it had been geared for business which had not happened. Worst hit were its two-day technology briefing sessions which had a high percentage of UK clients and accounted for 20% of its business.

The briefings are aimed at clients planning new projects like the implementation of databases.

## Late Times

TALKS between management and unions at The Times to try to get computerised typesetting equipment have failed to make expected progress and plans to start using the new kit for The Times Literary Supplement on November 7 have been dropped.

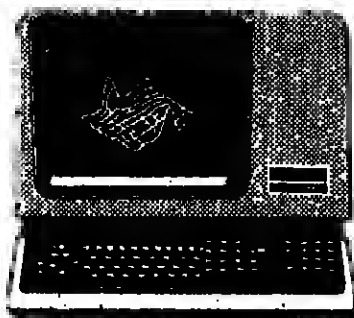
## AA drops Quotel

THE Automobile Association has dropped the computerised car insurance system Quotel in favour of an in-house developed system. Quotel was used on a bureau basis to give customers quotations over the phone from regional and central offices of the AA.

## Lloyd's losses

TOTAL losses by Lloyd's underwriters from policies they wrote on the residual values of IBM machines on third party leases could amount to \$420 million according to the latest estimate by the First National Bank of Boston.

## ★ Up-grade kit.

★ Available as  
a complete  
package.VT100  
With Graphics

That's right. A VT100 with graphics - multiple character sizes, dot-dash lines, point plotting, vector drawing, selective erase... complete emulation of Tektronix 4010 for compatibility of existing software. Fitted to your existing VT100 from £995 or supplied as a new complete package from £1995.

Remember, your VT100 is now available with graphics.  
Call for a demonstration, literature or quotation.

**COMMA  
COMPUTERS LTD**

**BRENTWOOD (0277) 811131.**

Westminster DP  
group planned

A MERGER is being proposed between the All-Party Committee on Information Technology, a group of MPs and peers, and the Parliamentary Computer Forum, for these outside Parliament, in order to form a single influential body to put forward the industry's views and keep MPs informed.

Briefing sessions, informal meetings, visits and dinners would all be part of the programme, supported by full-time secretarial staff.

The merger has to be approved by the forum's AGM, probably in January. It is hoped to cover the expected budget of about £20,000 a year through voluntary contributions from individuals and companies as well as through subscriptions. The administration would probably be contracted to a Parliamentary agent.

Some workers have  
suffered, IFIP told

WHILE computers have been a definite plus for the overall US economy, evidence indicates that workers in certain fields have suffered badly because of automation, says Dr Bruce Gilchrist of the Columbia University Centre for Computing Activities in New York.

Addressing delegates at the 1980 IFIP Conference at Melbourne, Dr Gilchrist pointed out that from 1951 (when the first production line computer was installed in the US) to 1979, the total number of

people in employment rose from 60 million to 90 million.

Presenting a paper entitled "Computers and employment: the US," he said: "One must conclude that the overall impact of computers on employment has been either positive or completely masked by other effects."

Gilchrist said re-training programmes had not, so far, concentrated on people laid off because of computerisation and that unemployment benefit was still considered by some as degrading.

The success of IFIP 80 and, more particularly, the exhibition may have "set a new tradition" for Australia as a venue for such major events, so said organising committee chairman Ashley Goldsworthy, winding up the conference.

With over 1,800 delegates attending the Australian segment of the conference over its four days, the event could unhesitatingly be called "a tremendous success," said Goldsworthy.

On the conference side, it was not only the bare number of registrants which had been encouraging, said programme organiser

DPS delays blamed for  
slump in profits

TWO new models have been added to Honeywell's DPS 8 line in the US - but the firm has blamed a fall in third quarter profits in part on problems with the DPS 8 circuit board at the Phoenix factory where the large systems are manufactured.

The DPS 8 is the successor to the medium-to-large Level 66 machines. The new models in the US are a dual processor version of the 8/44, called the 8/44D, and a field-upgrade of the 8/52.

Called the 8/62, the latter machine offers about 30 per cent better performance than the 8/52, and can be field-upgraded to the top-of-the-line DPS 8/70. The DPS 8/20 is field-upgradable to an 8/44, and on to the new 8/44D dual processor. A processor change is needed to move to an 8/52.

The 8/44D has about the same

questions about various aspects of computer technology, applications, and policy issues.

The name suggested for the new group is: All-Party Parliamentary Information Technology and Computing Group, APPIC. The word "computing" is included in the title to avoid misunderstanding owing to recent misuse of the phrase "information technology" to mean specifically text handling systems and communications.

## Subset

Thus the Aard report (CW, October 2) regarded information technology as a subset of micro-electronics rather than an all-embracing term taking in control systems and information science. APPIC is intended to cover as broad a field as possible.

The next briefing session to be held at the House of Parliament will be on "Computer-aided learning: breakthrough or gimmick?" on November 24.

Among the speakers will be Richard Hooper, director of Prestel, formerly director of the

National Development Programme on Computer-aided learning.

Under current plans the senior officers of APPIC will be elected by MPs in the group, while the other officers will be elected from the membership at large. Current chairman of the All-Party Committee is Ian Lloyd, MP (Con, Havant). Reaction so far from Forum members to the idea of a merger has been favourable, since activities have been co-ordinated in the past.

Under current plans the senior officers of APPIC will be elected by MPs in the group, while the other officers will be elected from the membership at large. Current chairman of the All-Party Committee is Ian Lloyd, MP (Con, Havant). Reaction so far from Forum members to the idea of a merger has been favourable, since activities have been co-ordinated in the past.

Under current plans the senior officers of APPIC will be elected by MPs in the group, while the other officers will be elected from the membership at large. Current chairman of the All-Party Committee is Ian Lloyd, MP (Con, Havant). Reaction so far from Forum members to the idea of a merger has been favourable, since activities have been co-ordinated in the past.

Under current plans the senior officers of APPIC will be elected by MPs in the group, while the other officers will be elected from the membership at large. Current chairman of the All-Party Committee is Ian Lloyd, MP (Con, Havant). Reaction so far from Forum members to the idea of a merger has been favourable, since activities have been co-ordinated in the past.

Under current plans the senior officers of APPIC will be elected by MPs in the group, while the other officers will be elected from the membership at large. Current chairman of the All-Party Committee is Ian Lloyd, MP (Con, Havant). Reaction so far from Forum members to the idea of a merger has been favourable, since activities have been co-ordinated in the past.

Under current plans the senior officers of APPIC will be elected by MPs in the group, while the other officers will be elected from the membership at large. Current chairman of the All-Party Committee is Ian Lloyd, MP (Con, Havant). Reaction so far from Forum members to the idea of a merger has been favourable, since activities have been co-ordinated in the past.

Under current plans the senior officers of APPIC will be elected by MPs in the group, while the other officers will be elected from the membership at large. Current chairman of the All-Party Committee is Ian Lloyd, MP (Con, Havant). Reaction so far from Forum members to the idea of a merger has been favourable, since activities have been co-ordinated in the past.

Under current plans the senior officers of APPIC will be elected by MPs in the group, while the other officers will be elected from the membership at large. Current chairman of the All-Party Committee is Ian Lloyd, MP (Con, Havant). Reaction so far from Forum members to the idea of a merger has been favourable, since activities have been co-ordinated in the past.

Under current plans the senior officers of APPIC will be elected by MPs in the group, while the other officers will be elected from the membership at large. Current chairman of the All-Party Committee is Ian Lloyd, MP (Con, Havant). Reaction so far from Forum members to the idea of a merger has been favourable, since activities have been co-ordinated in the past.

Under current plans the senior officers of APPIC will be elected by MPs in the group, while the other officers will be elected from the membership at large. Current chairman of the All-Party Committee is Ian Lloyd, MP (Con, Havant). Reaction so far from Forum members to the idea of a merger has been favourable, since activities have been co-ordinated in the past.

Under current plans the senior officers of APPIC will be elected by MPs in the group, while the other officers will be elected from the membership at large. Current chairman of the All-Party Committee is Ian Lloyd, MP (Con, Havant). Reaction so far from Forum members to the idea of a merger has been favourable, since activities have been co-ordinated in the past.



Prestel director Richard Hooper is to address the next briefing session of the Parliamentary Computer Forum.

Sound  
approach  
to  
typing

A KEYBOARD which uses ultrasonics in place of switches, the central feature of an electronic typewriter just launched by SCI in the US at a retail price of \$299, considerably less than competing machines. The machine promises to be the first in a series of electronic office products from SCI, including word processors.

The ultrasonic keyboard is claimed to be more reliable than conventional keyboards with its switch for every key, as a result of fewer parts. Apart from the SCI Typetronic, as the typewriter is known, is fairly typical of the breed, with a daisy-wheel printer, 10-character memory for corrections, and electronic tabs.

A rod runs underneath the board with teeth of differing shapes extending from it, one to each key. On depression, a line from the key strikes the teeth, sending up vibrations which are picked up by piezoelectric crystals at either end of the rod. The resulting electrical signals, which are different for each key, are decoded by a chip which then sends appropriate control signals to the daisy-wheel head in the usual way.

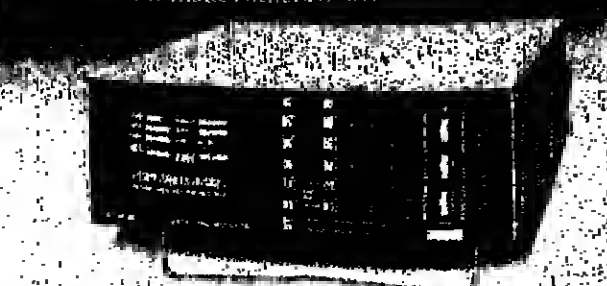
The printer, which runs at 10 characters per second, is of SCI's own design and manufacture. The company is quick to assert it is a terminal, and so might not be suitable for incorporating in a word processor.

The Typetronic is due for launch in December and should come to the UK early next year. UK price has not yet been fixed.

COLE.  
Our price and performance  
make other  
Data Line Monitors obsolete

You'd never specify a DLM on price alone. But at £2060 you've got to be interested in checking out the performance and product benefits such as high weight portability, ease of set up and rugged dependability.

Contact Cole today and you'll soon see why your Line Monitor makes other obsolete.



Name \_\_\_\_\_ Company \_\_\_\_\_  
Address \_\_\_\_\_  
Cole Electronics Limited  
105-107 Lansdowne Road  
Croydon CR9 3BX  
Tel: 01-680 8507  
Telex: 914847

**A better line of communication**

Printed in Great Britain by QB Limited, Sheepen Place, Colchester, CO3 3LJ, and published by IPC Electrical-Electronic Press Ltd, Dover House, Stamford Street, London, SE1 9LU.

**Rohan Computing**  
DEC LA34  
DEC VT100  
Ex-stock  
Ring for price  
Tel: Southam (09266) 4045

**SCOTTISH  
VACANCIES**  
031 226 5969  
DML COMPUTER  
PERSONNEL  
SERVICES

INSIDE  
THIS  
ISSUE

THIS second issue of Computer Weekly in a week is solely devoted to jobs. Specially contributed articles detail what's on offer, how much they pay, and advice on the skills most in demand.

The focus for this Recruitment Special is our own Compec show at London Olympia next week (November 4-8). It will be the largest gathering of the UK computer industry to date, and is the ideal time to examine the job market.

Inside are the views of employers, educators, politicians, consultants and trade unionists - plus the experiences of someone trying to get into the industry. They start with the attitudes of the government:

Tory view of the impact of micros.....	3
Educate the educators.....	4
Liberal prescription.....	8
Careers in banking.....	8
Peripatetic student.....	8
DP in insurance.....	10
Staff shortages arise.....	12
Laek of staff elows new technology.....	14
Building ensembles.....	18
Is technology changing jobs?.....	19
Bid to train more staff 20/21	
Graduates are favourites 22	
Careers in selling.....	24/25
Catch 22 for would-be programmers.....	25
Women in DP.....	31
Programming myths.....	32
Services set to overtake manufacturing.....	38
No escape from recession.....	40
Pay ahead of inflation.....	48
Machines or people.....	53
Focus on job market.....	56



about by technological change is the knowledge that we have found our niche in the new temple.

There are hundreds of computer-related vacancies in a land where more and more people are having idleness forced on them, some as a direct result of computerisation.

It is against this backdrop of local health within a general malaise that we bring out this year's

Free job finder  
service on  
offer at Compec

ALL the jobs advertised in this issue will be displayed at Compec's computer. A free Computer Weekly job finder service designed to match an individual's skills and background to the jobs available will be an extra bonus to a Compec visit.

A potential job applicant simply specifies the sort of job he is looking for and his experience as a minimum requirement. He may also specify the area of the country he wants to work in and the sort of industry.

## Print-out

He then receives a print-out of all the jobs in this issue which match his profile. The print-out gives a brief job description con-

taining other necessary experience required and the salary on offer, together with a person to contact and a phone number.

The applicant also fills in a more detailed form which includes his name, address, current position and salary. This is input to the computer and can be passed to employers looking to fill vacancies he might match. But the job-seeker can prevent it going to companies he names, or indeed can prevent it being circulated at all if he wishes to preserve complete anonymity.

The job finder is supplied by Coventry Data Services and located in a secluded booth on the Computer Weekly stand, No 3000, just inside the main Olympia entrance.

## RECRUITMENT SPECIAL

Number 731

Thursday, October 30, 1980

Price 25p

An oasis of prosperity  
in a desert  
of decline

by PAUL FISHER

A WALK round the Olympian oracles of Compec next week will be evidence enough that the computer industry is booming - while a look at the streets outside the exhibition has plenty to suggest a period of economic decline.

The cost of computing, with the happy exception of the price of our labour, is still falling. Elsewhere inflation rules. Cutting across the talk of social dislocation brought

Compec recruitment supplement.

The production of a recruitment supplement, full of recruitment advertisements, at a time when 2,062,900 people are registered as unemployed, would seem like an attempt to sell ice cream to Eskimos.

The success of the supplement is a clear demonstration of the continuing demand for skilled personnel. Such an optimistic statement must immediately be tempered by emphasising that it is skill which is in demand, and not just people. Nobody wants to employ uneducated bodies, however keen and eager those bodies might be.

Three and again our contributors have stressed the need for an appropriate education. Speaking for the government from the Department of Industry, Michael Marshall says: "We need designers who are trained to look at their work in a microelectronic context. We need mechanical engineers who are familiar with microelectronic hardware and software. Above all we need to attract a fair proportion of our best brains from our schools, universities and colleges into the fields that matter."

## Intellectual

Dame Judith Hart picks up the same theme, saying: "Our difficulty is that over the decades the intellectual values of our society have given more worth to the generalist, the classicist, the historian and the arts than to the hard practical areas of science, mathematics and technology."

She continues: "At the moment only 4% of all secondary pupils have access to computing facilities." She criticises public expenditure cuts and says: "We are talking of spending more on educating our children to meet the challenge of the future, but without any extravagant or unrealistic proposals."

The specialist, so long as his or her skill doesn't happen to be hot metal typesetting or blacksmithing, will always be in demand, but we need to create a constant supply of specialists.

One of the messages from this supplement is that we need to give people specific skills from an early age.

Before the Flood, Noah didn't need to know about the theories of precipitation; all that was necessary were some rudimentary boat building skills. Appropriate skills keep people away from the dole queues.

• Turn to page 48

Away from the rough and tumble of the exhibition floor is the nervous tranquillity of the interview room. It's the way of oil flesh to end in one at some time or another.

OPPORTUNITY  
IN THE  
MIDDLE EAST

The Whitaker Corporation of the U.S.A. are world leaders in health care. A significant part of their work is the staffing and managing of modern, well-equipped hospitals in the Middle East - where the English-speaking doctors, nurses and paramedical staff play a major role.

Currently we have a vacancy in Al Ain, Abu Dhabi for: **COMPUTER PROGRAMMER (U.S. \$17,000)** with two years' experience on an IBM 370 - offering the chance to work with an IBM 4331. Language required - COBOL; operating system - DOS.

Working with Whitaker means an exciting opportunity, valuable experience and more. That's because the salary for this single-status one-year contract is tax-free to U.K. citizens. We'll also give you free furnished accommodation, full insurance cover and round trip air fares. In addition you'll receive a bonus of three weeks' salary on completion of your contract.

If you'd like to work with Whitaker in Abu Dhabi - contact us today. Write or phone: Jane Windsor on (01) 584 4532 and tell us all about your career to date. Then we'll tell you more about the opportunity we have for you. Please quote Ref. No. 257.

Whitaker Life Sciences Limited,  
199 Knightsbridge, London SW7 1DE.  
We also have offices in Manchester (061) 928 2065 and Glasgow (041) 226 4912.

Dedicated to a world of health  
**Whitaker**  
LIFE SCIENCES LIMITED





# QUADRANT

## offers the professional service

Quadrant Recruitment Limited,  
a Northern based company is able to offer both clients and  
applicants an efficient and professional service.

### APPLICANTS

Listed below are a few of the many positions we currently have on our files.

#### PROJECT ENGINEER

North East to £9000

An exciting opportunity has arisen for a hardware engineer who would like to move into a senior management role in the future. The successful candidate will be a good communicator and be able to manage a small group of engineers.

#### SENIOR PROGRAMMER

Yorkshire to £7500

Our client is currently seeking a COBOL programmer with an in-depth knowledge of 2800 VME/B. Although IBM experience would be advantageous full training will be given.

#### SYSTEM DESIGNERS

Cheshire to £8000

An established and expanding Software House is seeking System Designers with an in-depth COBOL, CICS and JCL background and 3 years experience in a commercial environment.

#### PROGRAMMERS

c. £8000

SENIOR SYSTEMS ANALYST c. £10000

Cheshire

An international insurance company wishes to employ further staff with a minimum of 2 years experience for Programmers and 3 years for Analysts. Full knowledge of COBOL, ASSEMBLER, CICS and structured programming in a financial environment will gain you all the company benefits + low interest mortgage.

#### ASSISTANT DPM

North East

£ Excellent

Our client, a professional organisation is currently seeking an Assistant DPM. The successful candidate will be given the responsibility of developing new projects. Therefore, an in-depth analysis background and proficiency in RPE is essential.

#### SYSTEM SUPPORT

Manchester

£ Excellent

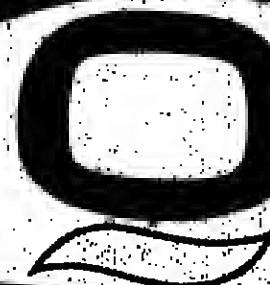
A national £ multi-million company requires two System Support people with knowledge of application programming and on-line experience on US/CI, with IBM standards MVS/PS 2, VM/CMS, CICS, TSO etc.

### CLIENTS

We offer the following services:

- \* An excellent up-to-date applicant register
- \* Recruitment facilities management.
- \* A highly ethical and professional approach at all times with the emphasis on quality rather than quantity.
- \* Assignment advertising at very competitive rates
- \* Specialised recruitment.

To find out more about our services, write in confidence or  
please phone either Irene Rogers on Sheffield (0742) 738794  
or Les Kirkwood on Manchester (061) 929-8302.



## Quadrant Recruitment Ltd

Les Kirkwood: Ashley House, Ashley Road, Altrincham WA14 2DB  
Irene Rogers: Bank House, Queen Street, Sheffield S1 1UF

24 HOUR  
ANSWERING  
SERVICE

EVENINGS:  
TELEPHONE  
(0924) 71810

# 'Micros will leave no one and nothing in Britain untouched'

WHEN I was invited to contribute this feature, I was asked to say which sectors in the computing field the government regarded as having the biggest growth potential. I can do so quite simply: they are those on which microelectronics is going to have the greatest impact.

This might seem to be begging the question, but it isn't. Microelectronics - and unfortunately too few firms in this country have yet woken up to the fact - is going to leave nothing and no one in Britain untouched: no sector of industry, no sector of commerce, no company, no individual. The microprocessor (or more precisely, the microcomputer) is now being used in sectors and applications where only a year or so ago, computing would have been ruled out by the cost and/or relative bulk of the machines then available. This process will inevitably accelerate. In other words, microelectronics is already transforming our industrial and commercial world, and changing the computer scene.

### Revolution

So what I am saying is that the computing field can no longer be looked at as the distinct entity it once was. For me to try to pinpoint particular growth sectors in the space available here would therefore serve no useful purpose.

Our greatest asset as a nation is our inventiveness. Innovation and invention are what count in microelectronics. So if we are quick enough in acquiring the skills and rethinking our attitudes there is no reason why we should not be up among the leaders. But we need to reappraise system design - and every other aspect of our industrial and business life - in microelectronic terms. And we need to start now.

I think it more sensible to talk in terms of generic areas, for this will allow me not only to suggest to my readers the zones and skills they should be thinking about, but also to emphasise the importance of government attitudes to the so-called Microelectronics Revolution.

The government believes that the well-being of this country's industrial and commercial base depends to a great extent on two things: first, the readiness of firms (and here I mean, of course, both management and workforce) to accept the new technology; second, their capacity to exploit it better and more rapidly than overseas firms which have appreciated its potential and are already doing something about it.

People are at last beginning to recognise that British productivity is in general well below that of our rivals, and that to pay ourselves more than we earn in terms of what we produce is to price ourselves out of the market, and hence out of jobs. If we can link this belated recognition of the facts of economic life to the scope and opportunities microelectronics offers us, we shall be able to heave ourselves up to the levels of efficiency and competitiveness which other industrial countries accept as the norm. If we can't (and this is un-

Michael Marshall, Conservative MP for Arundel, is Parliamentary Under-Secretary of State at the Department of Industry. In this article he stresses the need to take advantage of new technology and summarises the activities of MAP and ACARD.

thinkable), it won't be long before we find ourselves outbid in every way by overseas competitors who are eager to exploit the new opportunities. Time is short.

### Specialists

Our greatest asset as a nation is our inventiveness. Innovation and invention are what count in microelectronics. So if we are quick enough in acquiring the skills and rethinking our attitudes, there is no reason why we should not be up among the leaders. But we need to reappraise system design - and every other aspect of our industrial and business life - in microelectronic terms. And we need to start now.

We need designers who are trained to look at their work in a microelectronic context. We need mechanical engineers who are familiar with microelectronic hardware and software, and we need software and hardware specialists working alongside them as a matter of course. Above all we need to attract a fair proportion of the best brains from our schools, universities and colleges into the fields that matter.

Which are the fields that matter? I mentioned earlier that they are best discussed as generic areas. Broadly, then, microelectronics is going to make its presence most felt in two areas: manufacturing industry, and what has come to be called information technology (IT).

In manufacturing industry, the cheapness, reliability, compactness and high performance of the microcomputer and other microelectronic devices are well on the way to revolutionising the logic, control, data-processing, monitoring, detection and measuring instrumentation used in products and processes. Firms which still rely on electro-mechanical devices to perform these functions would therefore be well advised to do some quick thinking about the near future before it's too late. Particularly about the skills they are going to need when they take the plunge into microelectronics.

### Awareness

The Department of Industry is helping to establish microelectronics in manufacturing industry through its Microprocessor Application Project (MAP). MAP was launched to make firms aware of the importance of the new technology, and to encourage them to apply microprocessor techniques in their products and processes.

The aid available is provided under the following three heads: industrial awareness and training, where the aim is to draw the microprocessor's potential to the attention of people at all levels in industry, and to alleviate the shortage of people adequately skilled in microelectronics technology; feasibility studies and consultancy support, which is to encourage manufacturing firms, particularly small or medium-size companies, to consider the possibility of using microprocessors; the Department will pay up to £2,000 of the costs if they employ a consultant to look at their products and processes with this aim in mind (normally only the first such study will qualify for support); and development projects, where financial assistance, usually as a 25% grant (exceptionally as a 50%

shared-cost contract, with the Department's contribution recovered by a levy on sales), is available towards the cost of developing products or processes involving the application of microelectronics.

Detailed information is available from the MAP Centre, telephone 01-212 341115.

The importance of microelectronics is now at least recognised by about half the firms in manufacturing industry - even if there are still far too few doing enough to turn recognition into action.

MAP deserves credit for this. For example, there are now 30,000 short-term microelectronics training places where there were only 2,500 before.

More than 130,000 people have attended MAP awareness seminars; about 65,000 shopfloor workers have attended courses through the TUC training programme; and so far over 1,600 feasibility studies and 340 new projects have been supported. Nevertheless there is still a long way to go even in this field.

### Definition

The road to full awareness of information technology is likely to be just as difficult, for its implications are as yet little understood in this country, perhaps because of

● Turn to page 45



Michael Marshall

## Computer Telecommunications Consultants

Central London £11,000-£16,000

Extremely varied client requirements create the need for additional experienced software telecommunications specialists to join this successful Company. Project areas include: Networking, Message Switching, Multiple-Computer Distributed Systems, Office Automation, etc. Candidates should have a good degree. Age 28-33.

## Sales Executive D.D.P.

Birmingham based on quota £15,000 + 2 litre car

Our client, an international manufacturer of Distributed Data Processing systems, requires an additional experienced Sales Executive for their range of computer systems. Products cover: Data Entry, Applications and Modem-program Processing. The territory covers W. Midlands and S. Wales. Additional incentives and bonuses for top achievers.

## Mini-Computer Systems House

West Middlesex

\*Analyst/Programmers £6,000-£8,000

\*Senior Analyst/Programmers £8,000-£10,000

\*Senior Analysts £10,000-£12,000 + car

Our client, an established systems house offering a full range of computer services to commercial and professional businesses, requires additional experienced personnel. Experience in high level language programming, developing commercial systems on small interactive computers is important.

## Technical Sales Executive

Industrial Control Systems

Manchester

c. £11,000 + car

Our client, a major European consultancy, requires an experienced Sales Engineer to help further penetration of their systems into the process and manufacturing industries. As well as a proven sales record you should have a knowledge of computer industrial control systems.

## Real-Time Applications

Programmers

Technical Systems Development

West Surrey

£7,000-£11,000

A small, successful systems house specialising in scientific, communications and process control applications is seeking several additional programmers to join their development group. Experience with PDP 11 minis, Zilog and/or Intel micros would be useful. A PDP 11/34 is available in-house for development work. The Company offers profit sharing, non-contrib. pension and free life insurance.

Apply in confidence to Terry Harvey by sending personal and career details, or contact him for an application form, evenings Gt. Missenden (02406) 4705 or daytime as below.

**HR Harvey Recruitment**  
Executive and Computing Personnel Consultants  
500 Chesham House, 150 Regent Street,  
London W1R 5FA. Tel: 01-734 5351



# Educate the educators — call by Labour

WE face the future of a new era in which microelectronics displace workers, and reduce working hours. But — if the right industrial policies are carried out — it is a future in which productivity and the wealth of Britain is immeasurably increased. In all of this, the role of education becomes crucial.

We say in our Labour Party discussion document: "Why were we unaware that an international technology race was under way until five minutes to midnight? It reflects a deeply rooted defect in our educational and social values. In the past, we have promoted literacy in the arts at the expense of numeracy and literacy in technology. We have consistently undervalued practical technological understanding; and this in turn has produced generation after generation of decision-makers in our society who do not have it. Yet they tend to create the intellectual

environment and values which are dominant."

Our difficulty is that over the decades the intellectual values of our society have given more worth to the generalist, the classicist, the historian and the arts than to the hard practical areas of science, mathematics, and technology. Over and over again universities and colleges of technology have focussed on the imbalance in the emphasis our society gives to the arts as against sciences. Now the issue confronts us in all its stark reality.

## Reorientation

The Finniston Committee of Enquiry of Engineering: Our Future is the latest to say that Britain's industrial future depends upon a reorientation of our educational values.

It is now essential, as we say in our report, that the educators

themselves are educated; that every child in school has the opportunity to become familiar with the processes of the new technology, and to understand its methods. Not all will necessarily go on to use it in their work experience, although very many will in the years to come.

It is crucial that every child develops a comprehension of the world in which he is going to work and live.

Microelectronics are becoming a central element of the language of our society. In practical terms all schools should have computing facilities — either a computer of its own or access to a large computer. At the moment, according to a recent Department of Education Report, only 4 per cent of all secondary pupils have such access: most of them are "from the high attainment group", and distribution is patchy.

A useable system now costs around £1,000, which ought not to present an insuperable problem for schools within a national framework of public spending, spared from monetarist dogma (the present monstrous cuts in expenditure

on education would make even such a modest objective difficult of achieving).

We are necessarily talking of spending more on educating our children to meet the challenge of the future, but without any extravagant or unrealistic proposals.

## Intervention

We say: "None of this can be left to the free market. The education of our children and our people cannot be left to the caprice of commercial suppliers, most of whom at present operate within the framework of foreign transnational corporations. We need, and must have, firm intervention by central and local government, with the assistance of educational researchers, to make sure that we have the best for ourselves, and to create a base for potential exports of learning systems."

But, of course, spending on essential school infrastructure can only be effective if teachers themselves understand what they are teaching. On this our report says: "It is vital that all teachers are trained to understand and use information technology in their subjects. This will mean in-service training and changes in initial teacher training. An expansion of specialist training will be essential for teachers in those subjects most closely related to the new technology — mathematics, physics and electronics. And we shall need very many more teachers of computer technology."

## Changes

It will mean — or should mean — changes in school courses, to allow for specialist information technology courses and information technology courses; and it ought to mean an early intensive look by the examination boards at their own need to promote the vital curriculum changes which are needed by encouraging relevant examinable courses.

Beyond the age of 16 our universities and polytechnics have a crucial role. A clear strategy for both teaching and research must be developed and supported. In-service training for qualified scientists and technologists; cross-sector training, greater interchange between education and industrial professionals; and paid study leave for training and re-training. All these are elements in the programme we need.

In the area of science and research policy, although there is close co-operation between the Science Research Council and industry in the field of science and engineering, we lack an institutional framework for resource allocation which takes into account any considered concept of overall social objectives, which would necessarily involve a degree of public accountability involving every element in our community, not least the trade unions. We must work our way towards that. But, of course, it will be possible only with a

Dame Judith has been Labour MP for Lanark since 1980 and was Minister for Overseas Development between 1974 and 1977. Here she emphasises the changes need to be made to education and among educators to take advantage of the opportunities of microelectronics.



rent national planning which is based on an understanding of where we think we are going. The challenge of microelectronics presents us with such changes in employment and lifestyle that the issues must be translated from the technical to the social and that means political, too. The community has the right to ask that government poses the issues, explains them, and presents coherent policies.

## Thrust

So far I have talked of education for an understanding of the industrial revolution which is occurring in our society, and of the change in emphasis needed to develop our own industrial peace and skills to achieve a better thrust which has almost evaporated in the last few years, because there has been such huge failure to create an initiative in the machine of hardware and a number of software. But, of course, the need for understanding and education stretches so much further.

We know that the effects of employment, however combined, we quantify them, will be great for technical skilled and unskilled workers, and particularly for women. Indeed, the Equality

*We need to consider education for living: not the education for leisure which has so often been suggested... We need to ask the question: what do we want to do with the time released from the factory floor, the shop counters and the office desk? The choice must be free.*

Commissioner last week that within 20 years 170,000 typing and secretarial jobs will have disappeared. To this must be added the loss of jobs in shorter working weeks for shop workers and many in the service industries. The social changes produced by the chip are as likely to be as dramatic in the likely effects as was the industrial revolution of the late 18th and 19th centuries.

There will be, as we say, a new dimension in social relations. Just as the Industrial Revolution created an urban working class which had to fight its way out of exploitation and poverty, so the new technology will create a new divergence between those whose work is no longer needed, and those whose work is needed, and those whose work is unaffected or enriched. Microelectronics could therefore intensify inequalities.

Can the increased productivity which will result from microelectronics be equally shared? This lies the key political question.

Turn to page 45

# MYRIAD

## DATA COMMUNICATIONS ENGINEERS

£7,000-£10,000

### Berkshire

We are seeking additional ELECTRONICS ENGINEERS at all levels to join an INTERNATIONAL Product Engineering Group.

Market Leaders in the data communications industry our client can offer an excellent future whether you already have experience in this field or whether you have an electronics design background, preferably including micro-processor and LSI experience, and an interest in this rapidly expanding market.

Joining as a Product Engineer you will be trained fully and will build up the knowledge to provide specialist product support, advice and consultancy both within the company and to users throughout Europe. In order to do this you are likely to be a graduate (or equivalent) and to have a positive interest in communications technology. With users throughout Europe a degree of travel will be involved and the ability to work effectively on your own initiative is essential. Future career development prospects are extremely good and a valuable range of benefits, including a comprehensive relocation package, enhance the high commencing salary. Telephone us now to discuss these posts in detail, or write to us with relevant details at FREEPOST, London EC4B 4AA.

Ref: SW2/3010/CW

## SENIOR ANALYSTS

MOVE TO FIVE FIGURES

SOUTH  
HERTS

£10,000 +

Our client offers:

- \* New development
- \* Project responsibility
- \* Professional business environment
- \* IBM Hardware + TP & Database
- \* Planned career progression
- \* Regular education & training

You need:

- \* Innovation, energy & resolution
- \* Previous project success
- \* Leadership qualities
- \* Programming background
- \* Good liaison qualities
- \* Drive and ambition

The company is a highly successful organisation and offers a full range of employee benefits and job security.

Ref: N1/3010

## SECURE YOUR FUTURE

\* PROGRAMMERS \* ANALYSTS \* TEAM LEADERS

LONDON

£7,000-£10,500

The retail industry is becoming increasingly sophisticated and is still growing healthily. Our Client, a front runner in this industry and a household name has a vast number of outlets with a wide geographic spread. The growing size and complexity of their retail operations has led them to embark upon a major project to extend their interactive communications system.

This ambitious project has created the need for additional Programmers, Analysts and Team Leaders with a commercial systems background. Programmers should possess a minimum of a year's COBOL programming experience.

A substantial benefits package together with competitive salaries combine to make this an attractive opportunity to secure your future.

Ref: C1/3010

## IBM + MINI NETWORK

A large international company is expanding its data processing operation by adding a network of mini computers to its powerful IBM mainframe. These small machines will support DATABASE applications and all programming in COBOL.

## NORTH SURREY

PROGRAMMERS

c.£7,000

To specify and develop COBOL programs, applicants will have a good academic record with a minimum of twelve months commercial experience, preferably gained in an IBM environment.

ANALYST/PROGRAMMERS

£8-£9,500

These positions require systems analysis/design knowledge and will have the extra responsibility for project implementation and the supervision of programming staff.

The Company offers employee benefits commensurate with other major organisations and is very accessible by road and rail.

Ref: S1/3010

## ASSEMBLER IN ESSEX

c.£8,500

This is an ideal opportunity for IBM ASSEMBLER Programmers to make that important next move to establish themselves on an exciting career path.

Our client, a leading company in their field, is seeking additional programming staff to contribute to an extensive data processing development programme over the next five years. Full use will be made of Database and Real-time techniques.

The Company can offer you pleasant working conditions, up-to-date IBM hardware, an excellent salary and benefits, and the opportunity for positive progression to senior positions within the company.

If you would like to find out more about the excellent opportunities open to you, call Myriad now and discuss your future.

Ref: E1/3010

## MYRIAD APPOINTMENTS LIMITED

30 Fleet Street London EC4Y 1AA Telephone 01-353 0981 24 hours

Effective computing demands up-to-date skills in specialist techniques and methods. NCC Training provides a comprehensive range of courses in programming, data communications, systems analysis, and database.

Productive computing results from good management of DP resources. NCC Training covers standards, real time software project management, selection, and documentation in depth.

Efficient computing involves everyone in the DP department. NCC Training is for managers, project leaders, analysts, designers, programmers, and operators.

Successful computing also depends on the user organisation understanding the computer. NCC Training gives general management, auditors, and other users a thorough appreciation.

Computing evolves as the technology changes. NCC Training is continuously up-dated and new courses added to keep you in touch with new needs like security, micros, and the electronic office.

# NCC Training

Every computer user has different training requirements. NCC Training is available through public or private residential courses, in-house courses, and as packaged audio visual material, so that you can tailor your training programme to your individual needs.

NCC — If it's about Training we can help



NCC Training is for everyone working with, affected by, using, planning for, or starting a career in computers.

Send for your copy of our Training 81 brochure today.

John Walker, The National Computing Centre Limited  
Oxford Road Manchester M1 7ED Telephone 061 228 6333

I would like further information on NCC Training:

Name \_\_\_\_\_ (Please print name)

Position \_\_\_\_\_

Organisation \_\_\_\_\_

Address \_\_\_\_\_

Telephone Number \_\_\_\_\_

NCC CW 1/80/m



# Free trade – and some State intervention – is Liberal prescription

THE Liberal Party Assembly this year overwhelmingly passed a resolution calling for government assistance to new industries "relevant to the 1980s." Past resolutions had already laid the groundwork for the party's "lets get on with it" attitude, with policies for increased technical literacy in the school and a recognition in counselling services that young people may well have three or four different jobs in their working lifetimes.

Liberals are firm adherents to the principles of the free market, and free trade, but they also believe that it is the responsibility of government to ensure that everyone is playing by the same rules.

Thus, they accept that governments need to intervene where the markets are not operating properly, and they see a number of areas in the current "new technology" industries where government help is vital.

First, there is the question of government assistance to micro-electronics. How can the UK's private industry compete with the hundreds of millions of pounds being invested by Japan, the US, France or West Germany?

By delaying the merger injection of £25 million to Inmos by seven months, for example, the Tories may well have seriously damaged its strategic development plan. If the company does manage to get

back on course, it will be in spite of, rather than because of, the government's attitude.

Second, there are the cash limits placed on British Telecom, a strategic industry if there ever was one. These cash limits will not only limit our own development in information technology, but will probably seriously reduce our chances of selling our expertise abroad.

## Lead lost

Similarly, our initial lead in videodata technology may well be lost to France, who, by planning to give away videodata sets to every telephone subscriber, are creating the mass market they need, rather than waiting for it to develop.

Third, government involvement is urgently required in the setting of import tariffs. At present, individual chips and components are taxed at 17%, while assembled boards and computers are taxed at 5.8%. This is a direct disincentive to our computer firms, who assemble imported components into systems, and has significantly added to the difficulties faced by such companies as Nescom.

While these tariffs are set by the EEC rather than the UK alone, our government has made no effort to get them changed and seems simply unaware of the effects these tariffs are having.

It seems similarly unaware – or

uninterested – in the difficulties faced by manufacturers of high technology products faced by large scale imports of similar products from abroad.

Free trade is vital for the UK, which depends on exports for its very survival, but there is still no need to allow other countries to get away with either the dumping of goods to establish their markets, or reciprocal importing arrangements which are often a sham.

## Killed

In the case of the last UK electronic cash register company, for example, Chubb, the unsupervised import of Japanese models has killed the whole business.

The call of local Tory MP, Andrew Bowden for import controls, knowing his party would not even consider it, must be a sick joke to the 400 workers out of a job in this instance alone.

While the Tories' doctrinal refusal to help and foster our high technology industries is severely threatening our future industrial base, their lack of imagination and leadership in the field of education and training is just as serious.

The government has announced a £9 million programme for computer students in schools, of which £1 million is to be spent this year. This works out at about 25p per secondary school child. What sort of contribution to their technical

**DELIA VENABLES** is prospective Liberal Parliamentary candidate for Brighton Pavilion. At present she is running Microcomputer Advisory Services, a private company which provides assistance to small firms considering the purchase of a first computer.



competence can this possibly make?

Compared to the French plan for "a micro in every school" – still not an overgenerous concept – it is a bad joke.

To the best of my knowledge, there are no plans to provide equipment in the schools and no plan to set up a common purchasing body such as exists for universities to negotiate bulk discounts and ensure some basic compatibility.

Incidentally, it is important that computers are not just seen as necessary for technical training. It is vital that all children should have experience of using small computers and terminals so that they are able to cope with the increasing use of such things in their ordinary working and leisure environments.

## Training

Technical colleges, polytechnics and universities would willingly

increase their electronics and computer studies courses, but are simply unable to do so in the face of the current cuts in their budgets.

There is still a reasonable number of courses for the "high flyers", but what is particularly lacking is the commitment to training the much larger number of "ordinary" people for the technological world we live in.

What surely needs to be increasingly realised is that our industrial performance probably depends more on the attainments of the "Indians" than the "Chiefs" – and it is in this area that we appear to be particularly weak.

While Liberals argue strongly that our commitment to training in DT and electronics needs to be substantially increased, it is still true that, as a nation, we do not always use efficiently the skilled manpower that we have.

Think of all those local authorities, all over the country, busily writing their own housing maintenance, personnel management,

rate collection or electoral systems!

The same duplication of effort takes place at water boards, local authorities, and police forces. A sustained initiative from government to encourage the sharing of resources and expertise in the public sector would probably save more money – and the valuable staff – than many of the other cuts which are allowing services very seriously.

## Incomes policy

Liberals believe that a free-for-all – and the inflationary disruption which goes with it – is deeply damaging to our economy and that a long-term price incomes policy is the only way to avoid severe disruption of our lives, and runaway inflation.

We believe it is a very damaging way of reducing inflation than the present route.

● Turn to page 45

# MODUS

**International Personnel Consultants**  
Modus Management Services Limited  
148 Watling Street, Radlett, Herts. WD7 7JH  
Telephone: Radlett (09276) 3077

## Cobol Programmers and Systems Analysts

Hampshire £6,000-£9,000 + generous benefits worth approx. £1,500 + relocation assistance

### Programmers

Successful candidates will be experienced COBOL programmers, on any machine, batch or real-time. Exposure to commercial or financial applications would be useful.

### Systems Analysts

Applicants should have good in-depth systems analysis experience. Preference will be given to those with an insurance or accounting systems background.

The Company is a leading name in the financial world with a strong commitment to expansion in several areas over the next five years. This growth is already underway, and the company needs additional ambitious Programmers and Analysts who are now looking for a challenging career opportunity in an exciting D.P. environment. Candidates must be personable and articulate, with a commitment to using the highest professional standards. Initial interviews will be held in London by Modus and candidates can be assured of a speedy reaction.

## Technical Authors

Norway - Italy - U.K. Bedfordshire/Berkshire

Modus has been exclusively retained to recruit Technical Authors for a multi-discipline organisation in Norway for vacancies through to mid-1981. Applicants with proven writing experience in H/W systems and electronics are particularly sought, either permanent or freelance status available. In Italy, an excellent senior post is available for a technical publications practitioner, preferably with management experience and a computer background if possible. The U.K. market for Technical Authors is extremely buoyant and Modus can discuss the highest rates with experienced Authors well versed in computer hardware (to component level) or software knowledge of operating software/languages.

Call Modus to discuss all opportunities in technical publications, whether or not you fit the above vacancies; salary levels will always reflect experience and location.

## System Software Consultants

Mainframe (both IBM and UNIVAC) software development environment

Germany

£21,000+

Two Consultancies who specialise in software development have requested Modus to recruit several people with in-depth knowledge of IBM VM operating software and/or multi channel interface systems. Also required are designers with experience of linkage loaders. These vacancies are in the neighbourhood of Munich. In Frankfurt there are positions for UNIVAC experienced design personnel with a very sound background in TIP and OMS 1100.

Applicants must be willing to remain in Germany for at least one year, and possibly longer. The successful candidates will be offered an excellent package and enjoy a first class working environment, coupled with the high standard of living enjoyed on the Continent.

Consultants: — Mike Cremer or Andy Wright

If the advertised positions do not match your experience or aspirations, Mike and Andy are always available for a confidential discussion of the possibilities. An informal meeting — often an essential part of the process — can be quickly arranged.

1372

# MYRIAD

## Your Investment in people

A single minded and client oriented approach to recruitment has led to Myriad Appointments becoming one of the largest and most successful consultancies in its field. An impressive record of growth reflects this success in recruiting all categories of staff from programmers to senior management. An ever increasing number of managers throughout the Data Processing and Electronics industries are finding that our complete recruitment campaign package provides the most cost-effective means of successfully obtaining the staff they require.

**Myriad Appointments Limited**  
30 Fleet Street, London EC4Y 1AA  
**01-353 0981**

North East London  
Polytechnic  
Computer Centre  
Barking Road  
**Programmer**  
(2 posts) SO 1/2

Required to join a team of programmers working in three main areas: Academic Applications Systems and Management Information Systems. Applicants should possess a degree and be fluent in at least two programming languages (preferably one scientific and one business oriented language). The Centre operates IC 18035 and IBM 650 computers with extensive on-line facilities. The position offers a competitive salary and a pension scheme. The annual inclusive salary is on a scale from £7,025 to £8,112 according to age, qualifications and experience.

For further details and an application form please contact the Personnel Office, North East London Polytechnic, Asia House, Chaffers Road, Barking, Essex RM8 3LX. Telephone 01-507 2321, ext. 22 or 49, quoting reference number 422/80. Closing date: November 10, 1980.

**NELP**  
(233)

UNIVERSITY OF EDINBURGH  
DEPARTMENT OF CHEMISTRY  
**COMPUTING OFFICER**

Applications are invited for the post of Departmental Computing Officer. Salary Scale 1A (£6005-£6505 p.a.).

The post involves provision of assistance and advice to staff and students in all aspects of computing. Development of new applications using micro computer systems and liaison with the University's software specialists in the software department will be an advantage.

Applicants should possess an Honours Degree and have suitable postgraduate experience. Applications (three copies) together with the names of two referees should be sent not later than 12th December 1980 to the Secretary to the University, Old College, South Bridge, Edinburgh EH8 9YJ. From whom further particulars may be obtained. Please quote Ref. 702.

## MICRO COMPUTER DEVELOPMENT

West Midlands  
Negotiable £10,000 + Car

An exciting career opportunity has arisen within an established mini and micro computer turnkey organisation.

The role includes the development of hardware and software for micro systems from components supplied from a highly reputable and established source. The company has detailed and accurate plans for the future of this venture and will involve the successful candidate in the setting up and progress of the organisation.

You should offer a background in mini/micro computer technology, including in-depth knowledge of DEC based hardware and software. A good technical grounding in DEC operating systems, languages, device interfaces and peripherals is required. Knowledge of commercial, graphical and technical applications would be useful. It is expected that you would have relevant academic qualifications and probably be earning a package around £10,000 to £12,000 at the level required.

Any experience in liaison with manufacturers and customers would be very valuable.

This position offers the opportunity to be involved from the ground floor and to set up and establish a small team of professional staff. Salary will not be a limiting factor for the right candidate and general conditions such as pensions, sickness benefit, 11 weeks holiday, BUPA, regular reviews and a company car are well above average.

For a strictly confidential discussion, please contact Mike Heslan, Ref. CW286.

**COMPUTER PERSONNEL CONSULTANTS**  
18th Floor, The Rotunda  
Birmingham B2 4PA  
**021-632 8848**

**CPC**

## Sales Executives for CASE Communications Systems

CASE is expanding its sales force to meet the increasing demand for MSX, DCX and modem products. The CASE MSX is the U.K. Market Leader for message-switching — close to 100 customers — and with the recent addition of CASE DCX we offer unrivalled facilities for the communicating office of the future.

The DCX is, in effect, a circuit switched data exchange which leads the field in the Computer Communications market where CASE is challenging the number 1 position. CASE Modem products offer state-of-the-art facilities with integral Network Management.

If you are already a successful salesman at present earning in excess of £13,000 per annum we should like to hear from you. It is desirable but not essential that you have experience in our industry.

Please telephone Eileen Murphy, Personnel Manager, on Rickmansworth (09237) 76699 or write to her at

COMPUTER AND SYSTEMS ENGINEERING LTD.  
Woodcock Hill Estate, Harfield Road,  
Rickmansworth, Herts. WD3 1PL.



UNIVERSITY OF  
BIRMINGHAM  
MICROPROCESSOR SYSTEMS  
LABORATORY

**COMPUTER OFFICER**

Applications are invited for the post of Computer Officer within the University's newly established Microprocessor Systems Laboratory. Preference will be given to applicants who are professionally qualified, have relevant experience and are familiar with the software and hardware of a range of microprocessor systems.

Salary will be on the scale £4,795-£8,065-£22,555 (under review), plus superannuation. Further particulars are available from Mr. R. W. Bushaway, Computer Centre, University of Birmingham, P.O. Box 363, Birmingham B15 2TT, to whom applications (three copies) including a full curriculum vitae and naming three referees should be sent by Friday, 14th November, 1980. Please quote reference BWX.

**HAVE YOU A GOOD PUBLISHING IDEA?**

Principal of Group of printing factories wishes to meet person with a viable new idea that involves printing on paper or card and would have good sales potential or a known market. Please write in first instance to Mr. E. Blevins, Personnel, The Group, Great Tav, Colchester, Essex.

## Hoggett Bowers Executive Selection Consultants

BIRMINGHAM, CARDIFF, GLASGOW, LEEDS, LONDON, MANCHESTER, NEWCASTLE, NOTTINGHAM AND SHEFFIELD

## Data Processing Controller

Systems - Programming - Operating  
North Manchester, c.£8,000

Installation of an ICL ME 28 computer system has created this opportunity with an autonomous subsidiary of an international company, manufacturing medium/heavy capital equipment. Reporting to the Data Processing Manager, you will be responsible for the transfer to in-house operation and the ongoing development of systems within the company. Relevant experience in a computer department with broad based skills in data preparation and control, programming, and general systems design are essential. You should also be conversant with the ICL 2803/4 range of equipment and COBOL as a basic programming language. Excellent career prospects are offered, and relocation expenses are available if required.

S.A. Lievens, Ref: 25247/CW. Male or female candidates should telephone in confidence for a Personal History Form. MANCHESTER: 061-230 8881, Sun Life House, 3 Charlotte Street, M1 4HB.

(3372)



# How the banks put a smile back on career officers' faces

BARCLAYS BANK has 1,000 people working in its development section and computer operations satellites.

The bank's management services department is responsible for the recruitment and control of all such staff. The department has its head office in Knutsford, with offices set in 35 areas of parkland. Knutsford is well served with motorways and rail services and Manchester Airport is nearby.

All trainee programmers, regardless of educational standards, join a five-week intake course held at the department's own training centre. During this period they are given a general appreciation of computers and learn Cobol. On completion of this course, they join a project group.

Programming and systems staff are based at Radbroke Hall, but staff may from time to time be required to work for short periods at various locations throughout the country.

## Aptitude

The majority of recruitment is at the trainee computer programmer level and applicants must have, or expect to obtain, two "A" levels, one of which should be in a mathematical subject, or a degree when a specific discipline is demanded,

although a computer based subject would be of obvious benefit.

Recruitment commences in January/February of each year and all applicants must demonstrate an aptitude for programming.

Promotion is earned on merit, not age and length of service. After progressing through the trainee and junior levels, staff are assessed and either remain in programming or commence training for systems analysis or systems programming. There is a limited amount of recruitment of experienced personnel, but generally the department prefers staff to be trained through its own system.

## Peripheral

The main recruitment requirement in operations is at the trainee operator level, candidates having or expecting to obtain a minimum of four "O" levels, including Mathematics and English.

The candidates must demonstrate an aptitude for this type of work. Staff commence their training in the peripheral areas and instruction is carried out by our own staff either in the centres or in our training centre at Radbroke Hall.

All the accounting centres work a shift system but two of the centres operate 24 hours a day, seven days a week. When shift

working is undertaken a shift premium, in addition to basic salary, is payable.

It is possible for an entrant to reach senior operator level at a comparatively early age.

The bank does not normally recruit to this area above trainee level and the current salaries are from:

Trainee operator	£2,336
Operator	£3,604
Senior operator	£4,971

—a shift premium dependent on

requirement for network control engineers to monitor the high speed Post Office lines and identify any problems with these or the terminal equipment.

These engineers are encouraged to develop fault analysis equipment for this purpose. Having diagnosed the fault they will liaise with the area responsible for the equipment's maintenance.

Applicants to this area would normally hold a City and Guilds Certificate in Telecommunications and/or HND in Electrical Engineering. Previous experience in

ALL the clearing banks use a large amount of computer power and have the kind of recruitment programmes to put the smile back on a career officer's face.

KEN COLEBROOK, personnel manager with Barclays Bank's management services department, outlines what his organisation has to offer the job hunter.

seven-day, 24 hour cover on a shift rota system, for which a shift premium is payable.

The responsibility for maintaining a library of tapes and discs lies with the librarian. While there is a low turnover of staff in this area, occasional recruitment is necessary and, in the main, candidates are trained by the department. Librarians earn from £4,700 per year and a shift premium is also payable.

In each centre we have an operational support group whose responsibilities are to liaise between users and their counterparts in other centres to ensure that any problems handed over from the development section are operationally acceptable and are correctly applied to the Master Program Suite. These teams are also responsible for the implementation of software changes and enhancements. Staff in this area are normally drawn from within the accounting centres.

## Re-schedule

Vast quantities of paper and microfiche are delivered daily to the bank's branches and other users and the quality of print and the distribution of this output is controlled by mailing room supervisors.

In the case of any delays in pro-

duction, they are responsible for re-scheduling or re-creating deliveries. Close liaison with users and user is essential.

As there is low staff turnover in this area, recruitment is infrequent.

## Support

The work of the three operational support groups is coordinated by the central group based at Knutsford. They monitor hardware performance, forecast future equipment needs, discuss problem areas or equipment to be developed, recommend equipment purchases, etc. They also undertake capacity planning and the running of the bank's TSO facility available for program development.

Young staff who are required to leave the parental home to take a position with the bank may be qualified for an additional allowance.

There are many fringe benefits available to all full-time staff including a non-contributory pension scheme, profit sharing scheme, free banking facilities, subsidised restaurant and gym, and social facilities and other benefits normally associated with working for a major bank.

# 'Professional is a perpetual student'

LITTLEWOODS was one of the pioneers in the commercial application of computers and since the installation of its first machine, an Elliott 405, in 1957, it has had more than 20 years' successful experience and become the largest Honeywell commercial user in Europe.

At present, Littlewoods has, with the exception of banking, the largest commercial data processing development programme in the UK. The management makes extensive use of data processing in solving its business problems and the hardware in current use is both large and modern.

Computer equipment valued at over £20 million is installed at two central sites at the Liverpool headquarters, and additionally, all the mail order offices and distribution centres are remote computer sites. More than 800 staff are engaged on development and maintenance at the central sites in Liverpool from which computer management and control are exercised.

## High standards

Computers are at the heart of Littlewoods' business, and the company's profitable growth is closely linked to the successful development of computer applications. As the business expands, so do career opportunities in the group management services and group productivity services departments.

The organisation is constantly on the look-out for the right people to train for careers in data processing. Exceptionally

high standards are required from candidates, as the company invests a lot of formal and on-the-job training in these potential managers. This careful selection is justified, as fewer than 5% of 114 trainees for the GMS and GPS sections have left the company since September 1977.

From over 600 candidates who apply annually, about 30 succeed in becoming Littlewoods computer management trainees. This acceptance rate may sound daunting, but no arts or science graduate with serious career intentions should be deterred, as the company's requirements are broader than the uninitiated would expect. Special qualities are sought in addition to normal academic qualifications, and some of these requirements may surprise graduates who have not considered management services as a career.

## Mail order

These qualities relate closely to the needs of the mail order and chain store operations. A commercial organisation such as Littlewoods is not committed to computers for the sake of the technology, but for the business, and the technology must be designed and operated to serve the interests of the business.

It is therefore essential for DP managers to understand the aims, functions and problems of the organisation and to be able to communicate with all sorts of people within the business. It is essential that they should be able to identify and com-

municate with users in the non-computer areas of the organisation. A user may be director, buyer, marketing executive, stock controller, personnel officer, or any other manager in the company. A user is always a business person, seldom a scientist.

Successful candidates may be recruited from any academic discipline. Of 31 candidates who commenced training in September 1979, only eight were graduates in computer science or mathematics; the remainder had degrees in disciplines ranging from classics to zoology, medieval history to psychology.

## by Don Hazel

The first and most important quality the organisation looks for is aptitude, which is assessed by a number of tests. Applicants who pass these tests must then show that they have a sense of commitment to a long-term career: there is plenty of scope for movement and flexibility within DP as systems and applications are so varied, but opportunities of moving into it from another profession are very limited, and similarly it is unusual for a trained computer professional to switch to another type of job.

A third important requirement is the ability to get on well with other people and be happy to work as part of a team, as all DP work, whether in systems

development or special projects, is based on team effort. Ideally, team members should have the capacity to make the user, for whose benefit the system or project is designed, feel that he or she is part of the team too.

## Articulate

Analyst potential is another prime quality sought by the organisation. Though the term defines precise definition, it combines a logical and analytical approach to problems with a pleasant and outgoing personality.

Computer managers must

Outside the banks, Littlewoods has the largest computer installation in the UK with hardware worth £20 million. Don Hazel, management services manpower manager of the group, looks at how his firm recruits people into the DP division with a view to giving them a career for life. He also examines some of his firm's management philosophies — and concludes that one is always learning something in DP.

Formal training of successful applicants takes place in Littlewoods' own training centre, set up in 1977. Its main purpose is to fill the inevitable void between university or college learning on one hand, and the specific requirements of Honeywell technology and Littlewoods' systems and applications on the other.

Applicants finally selected as DP trainees begin with an 18-week basic course, which aims to prepare them to function effectively as a member of Littlewoods' management services. The main feature of the formal training course is the teaching of modern DP and programming skills. A general DP education is given as well, to equip trainees with sufficient knowledge to understand broader concepts and the DP role of management services in the company.

## On the job

At the end of the formal training course trainees are assigned to specific DP areas of the management services department to gain work experience. This on-the-job training continues until the anniversary of the date of joining the DP course. Subject to satisfactory progress, the trainees are then appointed to positions on the company staff.

Applicants for the trainee business analyst course are usually older than those for the DP course and they often have some previous business experience.

The trainee business course is designed to provide initial training and development of staff whose long-term objective is to become a business analyst in the business services area of Littlewoods' group management services.

After two years in group management or productivity services, opportunities for career advancement are excellent. It is company policy to recruit for senior positions from within the organisation, and to adopt a generous attitude to training.

The management services and productivity services functions are the responsibility of an executive director who reports to the managing director. The executive director's main areas of responsibility are as follows:

Group productivity services. Includes organisation and methods and industrial mechanisation.

Group management services. Is further subdivided:

1. Group systems development. Responsible for the development and maintenance of business and computer systems for the organisation.

2. Group computer operations. Responsible for operating the computing equipment and running the production system of the major computer installation at head office and similar installations sited at the various offices and distribution centres throughout the country.

3. Group computer security. Responsible for the integrity and security of all computer-based systems.

# Computer people — think ahead to 1981

Modular Computer Services is a world leader in the supply of computer systems to the industrial process control and communications marketplaces. In the last two years we have successfully established a manufacturing plant at our European H.Q. in Wokingham, doubled our installed client base in Europe and substantially increased our staff in all Departments. Our plans for 1981 are for continued growth and to achieve this we will need the following key personnel.

## Software development

Designers and Programmers for projects which include X25, Operating Systems, Pascal, Fortran 77 and Assembler Development.

## Product support

A Hardware Engineer to provide technical support to the European organisation and introduce new products to the field.

## Special systems

Consultants to be involved in the design and implementation of non-standard systems, either hardware or software.

## Customer service

Field Service Engineers with experience on either mainframe or minis for a number of different locations in the U.K.

## Sales

Sales Engineers with experience in the communications and process control markets.

Company benefits for these positions are excellent and include competitive salaries, a non-contributory pension scheme, free life insurance and free BUPA.

For further details or an application form ring Sue Hampson on Wokingham 788711, write to Modcomp, Molly Millars Lane, Wokingham, Berks. or visit our stand at COMPEC.

# MODCOMP

# GIVE YOURSELF A 19 PER CENT INCREASE WORK LOCALLY

## ANALYSTS, PROGRAMMERS OPERATORS

### ANALYSTS SENIOR PROGRAMMER

IBM, MID-KENT £11K

IBM COBOL, MID-KENT £9K + Mortgage

### ANALYST/PROGRAMMER ANALYST/PROGRAMMER

PL/1, WEST SUSSEX £9K

IBM COBOL, SOUTH COAST £8.5K + Mortgage

### OS SHIFT LEADER MVS SUPERVISOR

NORTH KENT, 3-SHIFT £8K +

NORTH KENT, NO SHIFTS £7.5K + Mortgage

### PROGRAMMER JUNIOR ANALYST

ICL COBOL, MID-KENT £7.5K +

WEST KENT, 1 YR. + £7K + Mortgage

### RPG2 PROGRAMMER

WEST KENT 1 YR. COMMERCIAL £6K

### JUNIOR COBOL PROGRAMMER

NORTH-WEST SUSSEX TO 6 MONTHS' COMMERCIAL

£4.5K

These are just a few of the positions available in Kent and Sussex. Now that rail fares are going up again, doesn't it make sense to work close to home and keep your money for yourself? We specialise in Kent and Sussex and can provide you with your future career. Then commuting becomes something that happens to other people. Why not pick up the phone and call us now.

COMPUTANT LIMITED  
RECRUITMENT AGENCY  
14 Mount Pleasant,  
Folkestone, Kent



## If you're on form... ...fill in this one.

If you're performing really well in your present job, you'll be keeping your eyes open for something better. But being a top performer, you've got better things to do with your time than pore over pages of job ads and make dozens of phone calls. So to save time, and to get yourself lined up for some of the best jobs going, just fill in our application form. We'll then get back to you - fast - with details of jobs that are exactly right for you.

**Personal** Please write in ballpoint, using block capitals. Surname \_\_\_\_\_ Forenames \_\_\_\_\_ Mr/Ms \_\_\_\_\_ Address \_\_\_\_\_

Tel. Home \_\_\_\_\_ Office (if relevant will be used) \_\_\_\_\_ Age \_\_\_\_\_ Nationality \_\_\_\_\_ Car? \_\_\_\_\_ Are you prepared to relocate in UK? ☐ Abroad? ☐ (tick box)

**Experience** Place no. of years in box, e.g. IBM 360/370 ☐ 4

### Machines:

Please specify model.

IBM 360/370 ☐  
IBM others (specify) ☐  
ICL 1900/2900 ☐  
ICL others (specify) ☐  
Honeywell ☐  
Univac ☐  
Burroughs ☐  
PDP ☐  
Other mainframes ☐

Other mini-computers (specify) ☐

### Languages

Cobol ☐  
Plon ☐  
Assembler ☐  
PL/I ☐  
Fortran ☐  
Filetab ☐  
RPG11 ☐  
Auto/easy/user code ☐  
Others (specify) ☐

### Operating Systems

DCS ☐  
OS ☐  
George (specify) ☐  
CICS/HASP/GRASP ☐  
DBOMP/MMT/IMS ☐  
CMS ☐  
Others (specify) ☐

### Position Sought

Please state briefly the type of appointment you are seeking.

Contract? ☐ Permanent? ☐ Either? ☐ (tick box)  
Minimum salary £ \_\_\_\_\_ Notice required/Date available \_\_\_\_\_  
Signed \_\_\_\_\_ Date \_\_\_\_\_

Cut out the whole advertisement and post to the address below.

**Knight**

Knight Computer Services Ltd.

**01-491 4706**

Having shed a quill pen and rolltop desk image, the insurance companies are now firmly aboard the computer bandwagon. BARRY FOTHERGILL, computer services manager with the Guardian Royal Exchange, reviews the changes and assesses the recruitment patterns which have been created.

## Insurance firms climb aboard the DP bandwagon



Barry Fothergill

DURING the last quarter century, the insurance industry has become one of the foremost commercial users of computer technology.

The transition from automated accounting and addressing equipment in the late Fifties and early Sixties to a computerised environment led to the need for systems analysts and computer programmers. In the early days such staff, in the main, were selected from insurance personnel by aptitude test, and initial training was provided by the computer manufacturers and by programmed instruction text.

The rapid technological advances in both hardware and software during the Sixties and early Seventies led to major expansion of computerised systems necessitating a significant increase in experienced DP staff.

### Attractions

Insurance companies embarked upon intensive recruitment campaigns. As employers, they offered many attractions: sound companies of repute, many of whom were household names; subsidised mortgages; pension funds; staff insurance schemes.

However, in the late Sixties, experienced programmers and analysts were riding the crest of a wave. Jobs were plentiful and security of employment and fringe benefits held less attraction than now.

Throughout the data processing industry, staff were on the move, increasing their salary with each change of employer. Systems houses flourished and many people were attracted by the variety of work and installations available through such employment.

Insurance companies, like most companies, were obliged to employ contract staff or to get projects out to bureaux in order to meet their expanding development.

Suddenly, and with little warning, the bubble burst and in 1971 it became an employer's market. Many established installations reaped the benefit, with a wide choice of experienced applicants for most of the positions advertised.

### Birth

There is little doubt that the completion of conversion to decimalisation had a marked effect on recruitment at that time. The short term need for staff to carry out such conversion was over and the demand for contract staff decreased considerably. In seeking permanent employment, many experienced analysts and programmers joined insurance installations.

This period saw the birth of the development of large systems in the insurance industry, when new technologies began to give rise to database applications and teleprocessing systems, desirable alternatives to the former paper-dependent environment of insurance. Many DP professionals recognised the growth potential and opportunities offered by the

new computing technologies when applied to insurance.

It was to be two or three years before the DP industry at large again experienced a significant mobility of staff occasioned by the pay freeze policies of the mid-Seventies. Even job security seemed to take second place to a significant salary increase available on a move to a new employer.

It was about this time that one began to see young people positively seeking their future in data processing and gearing their academic studies accordingly.

### Training

In my own company, we were quick to recognise the opportunities this new resource offered and we established and developed our own in-house DP training facilities to meet the need for initial and ongoing education and training.

It has been our practice, since the early Seventies, to employ as trainee computer programmers,



### High calibre

However, let us not overlook those areas of data processing which there will be a continuing need for a long time to come: information and security systems, database administration and a nicol help facilities can be provided satisfactorily by experienced DP professionals, while major part of distributed processing systems will continue to require central development and implementation.

I have tried to review the past and give consideration to the future in terms of our recruitment needs and obligations. But what of the present? Earlier this year, to our own company a detailed survey of the DP industry was conducted. It was clear from the interviews that they were seeking what may fairly be called 'the new fashioned' virtues of a job: security, employment and career potential. Very few of the respondents had an insurance orientation or background and yet they were aware of the opportunities and development such an environment offered.

Insurance appears to have shed its dusty image. We are a significant sector of the economic world, with much to offer the prospective employee in both short and long term. Let us exploit these benefits to their full capacity.

### Comfortable

Recruitment is very much a two-way exercise and it is important to let the prospective employee know as much as possible about the company and the insurance environment during the short time available at the interview.

**PEGASUS COMPUTER CONSULTANTS B.V.**  
Herengracht 566 1017CH Amsterdam The Netherlands

P-C-C

## NORTH AMERICA - CANADA or U.S.A.

### Programmers - IBM, UNIVAC, BURROUGHS

Our client is actively involved in a number of major systems development projects both in Western Europe and North America. Recent projects acquired in Canada and the USA require programmers to be based at one of the company's two offices in either Canada or the States, initially on a contract basis for 3-6 months with the possibility of a permanent position being offered thereafter.

The experience sought falls into the following categories:

- \* Commercial programming on Burroughs 800/1800
- \* Large IBM mainframe programming with in-depth knowledge of airline systems
- \* Extensive UNIVAC systems and software experience

In all cases, experience gained in the airline industry would be extremely useful but applicants must be able to back this up with a professional and technically competent approach to their work.

Contract rates and salaries will be discussed with successful candidates at interview but are likely to be in the region of US \$600-800 per week contract, US \$30-35,000 pa. for permanent employment.

Visas will be applied for by the client company and therefore preference will be given to British citizens with the right of abode in the UK.

Please send CV to above address or telephone  
**JIM MORRISON or ERIC RIXSON - Reverse charges - on**  
010-31-20-259664 or 010-31-20-239800

## IRISH DAIRY BOARD - DUBLIN DATA PROCESSING SPECIALISTS

The Irish Dairy Board is undertaking a major online/real time programme to ensure that its systems are geared to meet the rapidly changing requirements of the national dairy export organisation. The Board plans to install in the immediate future, an IBM 4341 computer operating under VM/370 and OS/VS1. Extensive use will be made of CMS and CICS. Vacancies now exist for the following positions at our Head Office in Dublin:

### SYSTEMS DEVELOPMENT MANAGER

To develop and co-ordinate a variety of projects. He/she will consult with all levels of management, evaluate user requirements and ensure that projects are implemented to the user's satisfaction.

The successful candidate, reporting to the Data Processing Manager, should have a minimum of five years systems experience, a strong systems design, implementation and analysis background, and will have previously been responsible for project management.

Experience in implementing online systems would be an advantage. It is desirable that the successful candidate will have a degree or professional qualifications.

### ANALYST/PROGRAMMERS

Applications are invited from persons preferably with three to four years experience in programming and systems analysis. Employing online techniques in nearly all new developments the successful candidate will be participating first hand in this expanding technology. Experience in online systems would be desirable.

### PROGRAMMERS

Vacancies exist for programmers with at least eighteen months experience in COBOL. Familiarity with inter-active program development, CICS and advance operating systems would be an advantage.

These positions offer exciting and challenging opportunities for high-calibre people who would like to progress their career in a modern computer environment. Attractive salaries will be offered. Contributory Superannuation Scheme.

Please write enclosing full curriculum vitae, before Friday, 7th November, 1980 to:

Personnel Executive,  
An Bord Baine Co-operative Limited,  
Grattan House, Lower Mount Street,  
Dublin 2.

**IRISH DAIRY BOARD**  
AN BORD BAINNE





**JBA****Sales Consultants**

**All areas £15k+ package plus car**  
A well established supplier of small business systems is about to launch a new product onto the U.K. market and now requires Sales Consultants in take responsibility for various territories in this country.  
Candidates must have a proven sales record preferably in the small to medium commercial market and be capable of undertaking d.p. studies for prospective customers.  
**Contact: Jim Baker**

**Senior Systems Analyst**

**London c. £10,500+**  
A large, well known organisation operating on an international basis require additional expertise in their systems development area.  
It is essential to have a minimum of five years experience in an IBM COBOL environment and candidates should have some knowledge and practical experience of financial applications and on-line systems. The ability to communicate effectively is of prime importance.  
This is an excellent opportunity to progress in a challenging and professional environment.  
**Contact: Isabel Bruce**

**Micro-Projects****Senior Development Engineer**

**North Surrey c. £10,000+**  
A growing systems software house specialising in micro based real-time telecommunications and data transmission packages, requires a Senior Engineer to lead specific development teams.  
The main responsibilities are to handle design, engineering, and implementation of micro and mini based projects from both hardware and software.  
Knowledge of the Z80 micro with ASSEMBLER, a strong background in real-time applications and the ability to negotiate at all levels are the main qualities being sought.  
A relocation package is available to the right applicant.  
**Contact: Brian Postles**

**Analyst/Programmer**

**Herts. c. £8-10,000**  
Our client an established marketing company specialising in sound recording equipment is currently expanding their D.P. department.  
They are developing a sophisticated real-time sales and distribution system as well as a whole range of order processing and general commercial systems, all of which use complex data base techniques. They require an Analyst/Programmer to assist the Computer Manager in the development and maintenance of their ICL 2904 site.  
The successful applicant will be required to have a working knowledge of COBOL, and have the ability to work on their own initiative.  
For this, candidates will be given every opportunity to progress within the company and offer excellent salaries and usual fringe benefits.  
**Contact: David Handry**

**Analyst Programmers**

**Wembley £8,000 - £10,000 neg.**  
A well known computer services company is looking for highly motivated personnel, capable of fitting into a fast moving and varied commercial environment.  
Applicants will join a small established team of d.p. professionals. Successful candidates will be competent Analyst/Programmers with good commercial applications experience and be able to demonstrate a sound working knowledge of COBOL and IBM JCL. The ability to communicate well with clients is important as is the drive to succeed in this challenging environment.  
Salary is negotiable according to relevant experience and the usual fringe benefits associated with a large organisation.  
**Contact: Margaret Stevens**

**Senior Systems Analyst**

**N.W. Kent up to £9,000**  
Our client, a successful specialist engineering and manufacturing organisation, has an opportunity for a Systems Analyst who is looking for a career step with considerable future potential.  
Candidates should be graduates, or professionally qualified, with an extensive systems background in developing commercial applications, preferably in a manufacturing environment using ICL equipment.  
This is a key appointment in D.P. development and applicants must have the personality, presence, leadership, intellect and capacity to deal with all levels of management and staff. Large Company benefits.  
**Contact: Jim Baker**

**Communications Programmers**

**London c. £8,000**  
We have been retained by an International consultancy organisation, who are expanding their development in Videotex systems, to recruit two software programmers to be involved with this exciting application.  
Applicants should have at least two years' programming experience, preferably with FORTRAN on PDP 11 or VAX 11 in a communications environment. Knowledge of X25, 3270, packet/message switching would be an advantage. Ability to work with users with minimal supervision is essential.  
The job involves colour, business graphics and networking.  
**Contact: Jim Baker**

**Programmer/Designers (Mini's)**

**London £9,500**  
A leading international consultancy organisation, are engaged in a major new mini-computer venture, and need experienced programmers to join their well established team of people developing and marketing a range of applications software, to various industries.  
There are three new positions available, due to expansion of the division, and to apply, it is essential to have at least three years experience in a small machine environment, and be accomplished in either BASIC or FORTRAN language, also to be educated to degree standard, preferably in a science or related subject.  
This is a superb opportunity to join a "blue-chip" company who can offer variety, quality, of experience and excellent career prospects.  
**Contact: Janet Chilvers**

**JAMES BAKER ASSOCIATES,**  
International Personnel Consultants,  
32 Savile Row, London W1.  
Tel: 01-439 9311.

**RODERICK BRAITHWAITE** of Charles Baker Recruitment takes an optimistic view of what the future holds for DP staff. He takes a look at the scene both at home and abroad.

# More people needed in the DP jobs crisis

ONE aspect of this new decade, in recruitment terms, is that we have now witnessed the last of the really big "surge" years for UK recruitment as a whole.  
The cyclic fluctuations will still be there, as we have always known them, but we are not going to see any more of those upsurges of expenditure, such as we experienced in 1973 and again in 1979.  
The Charles Baker Manpower Research Unit, for example, predicts that the market will fall by 6% in 1980, and by a further 1% within 1981, flattening out later that year into 1982, and thereafter starting to climb again, but slowly.  
Some management selection consultants on the other hand anticipate that the return to accustomed levels of activity and, therefore, competition, will come earlier, even by the end of 1981.  
In fact, demand has now become greater in Holland, West Germany, Belgium, Ireland, France, and, to a slightly lesser degree, Italy and Spain, and no problems!

**Competition**

It is the case that, as regards recruitment for the UK, the future picture will be one of competition for skills and experience at the middle and upper levels of most job areas.

However, the accustomed skill shortage fields of electronic-electrical engineers, most of the DP skills, etc will continue to be difficult to recruit for.  
This article examines the DP market from the recruiter's point of view: but the potential recruit should also find some guidance through the jungle.  
It would seem that despite the occasional headline in the Press "DP staff to be made redundant", it happens only in isolation, as a glance at any recruitment advertising media will show.  
Several hundred DP vacancies are advertised regularly every week, plus the unknown hundreds of vacancies that are notified to recruiters and not necessarily advertised at all.

**Demand**

Another aspect is the demand for DP expertise in areas such as marketing, lecturing, sales, the communications industries and the chip technology fields, to name but a few. The current depression does not seem to have taken any toll that seems apparent in those of us who seek such talent.  
Supposing, though, that the crunch does come and the depression hits us all, what then?  
No doubt some people in DP

might lose their jobs, but it is difficult to visualise any part of the long-standing overseas demand for UK DP and communications ability continuing to drop.  
In fact, demand has now become greater in Holland, West Germany, Belgium, Ireland, France, and, to a slightly lesser degree, Italy and Spain, and no problems!

The Middle East, South Africa, Canada, the US and Australia take a bit longer, but these are keeping in touch with overseas opportunities and are making themselves aware of overseas opportunities in the UK.  
While overseas demand for expertise in data processing, communications continues to be high, as has done for many years - it has become apparent that the UK is just as attractive as the overseas markets until tax breaks, bonuses and leave are taken into consideration.

In many instances, standard living, working conditions, above all, recognition of skills and the opportunity of personal advancement are superior to those currently available at home.

**Gloom?**

The professional recruit, either for the overseas market or for the UK has not so far seen a marked increase in the number of applicants coming forward this year, nor has he seen any decline in the demand for DP staff despite the predictions and gloom predicted by the media.  
It has been estimated that 20,000 experienced DP professionals become available to the UK market on Monday, the 1st January 1981 and there would still be vacancies advertised in the Press.

However, for those individuals who have DP experience and are prepared to travel, the chances, in any of the overseas future, should hold no more.  
The spectre of mass unemployment in the computer industry will be covered by sheer demand, whether within or without the islands.

There has never been a better time than now - as 1980 draws to a close - for the employer to recruit outstanding talent.  
Similarly, the DP expert who is in a position to really make a difference where his abilities are required, will find his position very attractive, and his "depression", long may it last, with us!

**IBM**

OS COBOL Analyst/Programmer  
COBOL ASSEMBLER Programmer  
PL1 IMS Programmers  
PL1 IMS DB Programmers  
PL1 AOS Programmers  
OS PL1 Analyst Programmers

**OTHER MAINFRAMES**

H62 FMS COBOL Analyst/Programmer  
H64 IOS/TOS COBOL Programmers  
H66 IOS/TOS COBOL Programmers  
ICL IOMS COBOL Analyst/Programmer  
UNIVAC 9000 COBOL Analyst/Programmer  
UNIVAC V77 Consultant

**MINI/MICRO**

CPM Micro BASIC II Programmers  
GENRAO 2270/2290 Programmers  
BTI 4000/5000 Consultant  
OG NOVA Business BASIC Analyst/Programmer  
RTL2 Programmers  
DEC RSX11M MACRO 11 Programmers  
Commercial Systems Analyst with distributed processing experience.

**OTHERS**

Burroughs COBOL CMS Analyst/Programmer

**Computer People Midlands**  
Work in the Midlands, ring  
Birmingham (021) 643 8501  
- in South Wales and Avon,  
ring Bristol (0272) 292916  
- or mail the coupon.

Name \_\_\_\_\_ (ICW)  
Address \_\_\_\_\_

Tel. (Day) \_\_\_\_\_ (Ev. Wkd) \_\_\_\_\_

Mail (no stamp) to FREEPOST, Computer People  
Midlands, Alpha Tower, Birmingham B1 1BR.

**Computer People Midlands**

## MIDLANDS EXPERIENCED COMPUTER PEOPLE to £10,000

Why not join a successful organisation with a 7-year history in an expanding industry? Our turnover grew by 51% this year!

We are looking for a limited number of Senior Programmers, Analysts, Programmers and Software Specialists to join our teams working on IBM 370, 4300 and 303X as well as Burroughs and DEC systems.

Ideally we seek relevant experience, but we are happy to discuss career and training prospects with experienced computer staff, no matter what your background.

We are a Systems Company with an outstanding reputation. Our strength lies in our management and staff who are highly competent, friendly and enthusiastic. Conditions match the best available and include:

- 6 monthly salary reviews
- 6 monthly bonus
- Pension Scheme
- Free Life Insurance
- Sickness and Accident Scheme
- Motoring Allowance
- 5 weeks' holiday
- Company Car Scheme for qualifying individuals

to discuss these opportunities please contact:  
Mike Heselen, Ref. CW288

**COMPUTER PERSONNEL  
CONSULTANTS**  
18th Floor, The Rotunda  
Birmingham B2 4PA  
021-632 6848

**CPC**

**CONTRACTS**

It's reassuring to know that the consultancy with a far-reaching contract register is also the consultancy with excellent knowledge of the local market.

Our offices in Birmingham and Leeds give you access to some of the most lucrative and interesting work locally, together with advice gained through several years experience in all aspects of UK and Overseas contracts.

The following represent a small selection of the contracts we currently have to offer -

**U.K. NORTH**

ICI Cobol VME/B IDMS Programmers & Analysts - NE/NW/SW and Kent  
Honeywell Cobol IOS TDS Programmer - Midlands  
IBM Cobol CICS IMS DB/OL Programmer - Lancs  
Marconi Myriad Usercon Graphics Designer  
Univac 90/60 Cobol UNIS Programmer  
IBM Cobol CICS DL1 Programmers & Analysts  
IBM IMS DB/UC Systems Programmer  
ICL 2903 Systems Programmer with good CSC 45  
VME/B S 3 Systems Programmer  
Cobol 66 Compiler Development  
ICL Cobol VME/B Programmer  
ICL 1900 G2 CBL TPS Programmer  
OMAC Consultant  
2903/4 Cobol On-line Programmers  
IBM System 3 RPG 2 Programmer  
ICL IDMS DB Designer

These are only a few of the challenging contracts our LEEDS OFFICE can offer you. For further details about these or any of the opportunities available telephone:

**LEEDS (0532) 31611**

Or send the coupon to: Linscott Computer Systems (Northern) Limited, 'Freepost', Leeds LS1 1YV.

**U.K. SOUTH**

IBM OS Cobol Programmer - South Coast  
Intel 8085 Assembler  
IBM Assembler Systems Programmer  
IBM Cobol TSO ROSCOE Programmer  
IBM Cobol CICS Programmer  
IBM Assembler CICS Programmer  
IBM MLC IV DOS Programmer  
U1100 Cobol Prof. on-line experienced programmer  
Business Analyst IBM (Accounting background)  
Programmer Cobol DOS CICS  
IBM 810D CBL Programmers  
IBM Cobol CICS DL1 Programmer  
Prime 500 Cobol Programmer  
DG Nova Cobol Programmer  
ICL Cobol VME/B IDMS Programmer  
PDP 11 Corel Programmer  
Systems Programmer MVS and Communications  
Honeywell Level 6 Screenwrite  
ICL S3 Programmer  
Analyst/Programmer OS Cobol IMS  
DOS Cobol Programme

**OVERSEAS**

IBM Cobol CICS Programmers (Immediate) - New York  
Intel 8080 Assembler & PLM Programmer, Banking experience essential. - New Jersey  
Assembler PL1 IBM Programmer  
Analyst/Programmer Plan Cobol 2904 (2 year contract)  
ICL Cobol VME/B IDMS Programme & Analyst  
IBM Sys. 34 RPG 2 Analyst/Programmer (October)  
Systems Programme OOS or DOS VSE  
Siemens BS 2000 Systems Programmer  
IBM 4300 DOS VSE Cobol Fortran Programmer  
IBM MLC IV Programmer (Dutch Speaking)  
ICL 1800-2800 OME Cobol Programmer (must speak French)  
ICL 1800/2903 Cobol Programmer (French speaking)  
IBM 370 VM/CMS Systems Programmer  
PDP 11 Cobol Programmer - Holland  
- Nigeria  
- Abu Dhabi  
- Paris  
- France  
- Amsterdam  
- Belgium

For more information about the above contracts in the South and Overseas or send the others on our books, telephone: BRENTWOOD (0277) 212021 or send the coupon to: Linscott Computer Systems Limited, 'Freepost', Brentwood, Essex CM15 9BR.

I am interested in contract work

NAME

ADDRESS

HOME TEL. NO.

WORK TEL. NO.

HARDWARE USED

LANGUAGE USED

**LINSCOTT**



**CONTROL SYSTEMS**

2-3 years Assembler on Minis in an Industrial Process Control environment required by Specialist Systems House in rural Herts. Graduates with Science or Computer Science degrees preferred

to £9K

**MICRO SALES**

Sales Engineers with good technical background in computers plus previous end-user, OEM or export sales experience required to increase sales force of leading Micro Supplier. Head office in London.

£10K + car + comm.

**DEC N. HANTS**

Team Leaders with solid DEC experience required to build management structure within leading Electronic Instrument Group involved in instrumentation and control and Radar Systems. Macro 11 and RSX 11M knowledge advantageous.

£8-12K

**HOLLAND MINI & MICRO**

Best-line Mini and Micro Programmers, Analysts and Consultants sought by Dutch Systems House involved chiefly in technical and scientific projects. Assembler or sentinel, Coral, RTL 2 or similar also of interest. Generous relocation packages for permanent positions, substantial benefits.

to £17K

**MANUFACTURER MIDDX**

Programmers (min. 1 year) and Project Leaders with commercial or financial backgrounds (accounting, banking, business systems) needed to fulfil expansion plans of leading Manufacturer. Machine range from large mainframes to small minis. COBOL preferred, as is degree level education.

to £11.5K

**Assembler & RTL 12****Micros & Minis — Home Counties**

If you have two or more years' experience in Assembler, RTL 2 or similar on micros or small minis there is a wealth of job opportunities for you. In particular we are currently looking for all levels of personnel from Programmers, through Analysts and Designers, to Project Managers, with knowledge of commercial applications.

Our Client is the micro division of a leading British Systems House: at this specialist office in the North Home Counties teams of experts are already working on the commercial application of their own design of microprocessors.

Specific requirements are for experience in developing system software and modifiable systems efficient in memory use, T1 or Z80 specialists are of particular interest. All applicants with good relevant mini/micro experience are encouraged to apply. Company benefits are in line with our Client's International reputation and standing. Relocation assistance offered.

Salaries £7-12K

**MESSAGE SWITCHING**

Analysts and Programmers with Assembler, Coral, RTL 2 or Basic experience, plus 2 or more years in the message switching field, needed urgently for UK and European projects operated by Systems House.

UK to £11K

EEC to £17K

**PL/1**

Programmers and Analysts with strong PL/1 programming background, ideally with DB, TP or other specialist IBM knowledge, required for UK, European and Middle East assignments operated by British Systems House. London interviews.

£neg.

**DATA COMMS**

Applications Engineer and Junior Design Engineer (analogue and digital circuit experience preferred), sought by new UK subsidiary of American Data Comm equipment supplier to work on modems, multi-plexors, etc. Berks location.

c £8K

**MIDDX — BAL**

Systems Programmers with experience of large IBM equipment, preferably with database and TP knowledge will find challenging and rewarding work with this International Manufacturer in Middlesbrough. Experience of compilers advantageous, MVS, VSAM, IMS of particular interest. Relocation offered.

£8-12K + car

**MACRO 11**

Programmers and Analysts/Programmers with 2+ years' Macro 11 wanted to join young but rapidly growing Software House. Projects are technical, scientific and military, so knowledge of CORAL, Fortran, etc. is an additional advantage. Offices in London projects in diverse locations.

to £10K



D.O.E. Lic No. SE1A15127

10 Grenville Place  
London SW7 4RW  
01 373 3063  
to 8.30pm 7 days a week

**Reward Offered**

£7-13K (U.K.) £12-22K (E.E.C.)  
We are recruiting for hundreds of companies throughout the UK and EEC requiring Analysts, Programmers, Designers etc. For a comprehensive list of openings complete and send the coupon to: MATRIX LTD.  
FREEPOST, LONDON SW7 4BR

Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Postcode: \_\_\_\_\_  
Position: \_\_\_\_\_

# Lack of staff is slowing adoption of technology

ALTHOUGH the country is faced with alarming unemployment, there is still a great demand for computer staff in most parts of the country, in particular in the systems and programming fields. This shortage is a factor in the relatively slow adoption of technology in the UK.

Further automation and the adoption of technology is supported by the Trades Union Congress and most of the trades union movement because the alternative is economic disaster.

If the UK is to compete with other industrialised nations, then the government must tackle the obstacles facing the implementation and adoption of technology. One of the obstacles is the problem relating to the shortage of the supply of labour in the computer industry and the government must initially accept the recommendations of the recent reports and start making a number of decisions which will improve the supply of labour in this field.

**Must sign**

The government must also sign technology agreements with the Civil Service unions and similarly encourage private employers to sign such agreements with their unions; this would assist in increasing the supply of labour which is in great demand and also make it easier to attract school and university leavers to the computer industry.

A number of reports have dealt with this shortage of manpower and, in 1977, the manpower sub-committee of the National Economic Development Office's Computer Sector Working Party was established.

Its terms of reference were to identify trends in employment in the computer industry, to study the question of planning its future manpower needs and to make appropriate recommendations to government and other bodies to promote a better balance of supply and demand for skilled manpower in the industry in the future.

After much work and the issuing of an interim report, the final report was published in June 1980 and a number of recommendations were made.

**Support**

The sub-committee's recommendations to the government called for more effective support of the recent programme for initial and real time programming, existing TOPS and Threshold programmes to be boosted, extension of the existing role of the Engineering Industry Training Board to provide a more effective national focus of responsibility for training in computer skills; further research into appropriate forms of aptitude testing; the educational system to be encouraged to introduce knowledge of computers at the formative ages; expenditure on engineering and systems disciplines to be increased.

It is worth quoting the last recommendation to government in full because our future depends upon the support given to it by government: "In developing its policies towards the support of information technology, both in the supplying sectors and in key applications, the government should pay particular attention to the need to optimise the use of scarce computer skilled manpower resources for the benefit of the country's economy."

**Agreements**

The recommendations to trades unions and employers include a call for the speedy conclusion of technology agreements; that every

opportunity should be taken to improve programmer productivity; that qualification overkill should be avoided; that there should be a greater commitment to training and retraining; that career structures should be examined to assure that labour can be attracted and retained; and that better links should be established with the education system.

My union — The Banking Insurance and Finance Union — would generally welcome the above recommendations, in particular those aimed at unions and employers.

BIFU supports technology agreements and is in the process of drawing up agreements to submit to employers in banking, insurance and finance.

Unfortunately, one of the clearing banks has already indicated its refusal to sign such an agreement although they have not as yet had sight of any draft. BIFU has also called upon the employers to negotiate with us to accept these recommendations.

Terry Molloy is assistant secretary of the Banking, Insurance and Finance Union (BIFU). This article contains BIFU's reactions to recent reports from the Advisory Council for Applied Research and Development and the Manpower Sub-Committee on Technology.

There is a need in the finance field to improve programmer productivity, to avoid qualification overkill, to improve training and retraining, to improve movements of staff between clerical and computer areas and to improve career structures.

BIFU has approached a number of employers to recognise certain computer qualifications by granting day release and rewards for qualifications obtained in this field.

**Rejected**

The employers have rejected the union's claim, although they grant day release and financial rewards for staff passing Institute of Bankers examinations.

The union is continuing to press this claim and is also raising the matter in committees elsewhere. What concerns the union most is that employers in banking, insurance and finance — as well as employers generally in the computer industry — do not recognise computer qualifications as, for example, banks recognise the Institute of Bankers.

Day release for any computer study course is almost unknown. This is one of the problems not just facing the union; it is a problem to be faced nationally if this country is to compete in the modern economic world.

In another report on information technology, published in September 1980 by the Advisory Council for Applied Research and Development (Acad), concern was again voiced over the difficulties of labour supply to the computer industry.

The terms of reference were: "To consider whether the development and application of information technology in the United Kingdom should be stimulated; to consider whether there are constraints to the development of the industries in the United Kingdom which supply and apply information technology equipment; software and systems, compared to our major competitors; so make recommendations."

Among the Acad recommendations

were that a Minister of employment department should be responsible for the co-ordination of government policies and on the promotion and development of information technology through, among other things, education and that "careers services at school level and higher should review the guidance to students about opportunities in information technology, to attract entrants from a range of disciplines" and that government, its agencies, vocational bodies at all levels, should examine the provision of education and training courses in relation to information technology and propose measures to increase an increase of training in the field.

As with the manpower sub-committee report, my union generally accepts the recommendations of Acad, in particular three listed above, which attempts to stimulate the supply of manpower to the computer industry.

Technology will provide a challenge second to none; it will be a challenge to the government, employers and trade unions and one which will have to be met together, or we will pay the cost for generations to come.

**Recognise**

Many things need to be done but the first step is to recognise the importance of microcomputers and the need to train and develop our youngsters so that we have the skill and knowledge needed to enter into the 1990s.

The Commission of the European Communities has been concerned over the situation faced by Europe from Japan.

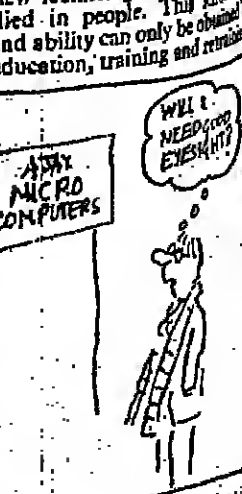
"The present industrial situation leaves much to be desired. Europe's intellectual contribution to the new technologies is not as marked as in the case of Japan and the United States."

European owned companies have 15% of the world market compared to 73% for the USA.

**Challenges**

"In software and telecommunications, the European position is far stronger and more secure than in hardware. But the European telecommunications industry faces a competitive challenge from the world market from the USA, Japan, while in the case of electronic components, Europe imports over 90% of its requirements. Integrated circuits which are adaptable and powerful blocks of the electronic age."

Trades union organisations in Europe are as concerned over the competitive position of Europe as the trades unions in the UK. It also accepts that full advantage of the ability to take full advantage of new technologies is mainly confined to people. This knowledge and ability can only be obtained through education, training and retraining.



# The Sky, at Knight is the limit!

## Knight Programming Support Limited

**Top Money****Security and Insurance****Big Scope Contracts****New Opportunities Every Week****Overseas Vacancies**

**PROGRAMMERS**  
Opportunity knocks in the North Country. Around £310 for good ICL/VMEB experience and IDMS expertise. November start date for long-term contracts.

**PROGRAMMERS**  
£280 in the North West ICL 2904, COBOL PROGRAMMERS to work on Transaction Processing Systems for major client. Immediate start for 6 months contract.

**PROGRAMMERS**  
Here's a quickie offering a fast £300 a week. ICL System 10 ASSEMBLER with IMOS. Immediate start in the North West.

**PROGRAMMERS**  
How about this for another Knight spectacular? £380 and long-term too! Immediate start in the Midlands for IBM PL1, IMS DB/DC experienced programmers.

**SYSTEMS DESIGNERS**  
Contract of the week offers £350 right through into the New Year. IBM 370, COBOL Designers with CICS expertise will do a big job for this North East company.

**ANALYST PROGRAMMERS**  
Christmas in the Midlands with £340 to help the celebrations along. IBM COBOL and/or ASSEMBLER experience with OS/MVS and ROSCOE. Immediate starts.

**PROGRAMMERS**  
NCR B250, with IMOS experience £175 for programmers in the Midlands. Start now on this attractive short-term contract.

**PROGRAMMERS**  
Systems Analysts start here with a generous £310. Client in the Midlands offers long-term contracts with an immediate start for PROGRAMMERS with HW Level 64/66 and e knowledge of communications.

**PROGRAMMERS**  
Prompt start in various locations for PROGRAMMERS with Data General, COBOL/FORTRAN and/or ASSEMBLER knowledge. A.O.S. helpful in collection of £310 a week over 3 months plus duration.

**PROGRAMMERS**  
Good money long term, but only for UNIVAC 1100, FORTRAN and/or COBOL PROGRAMMERS who know their business and something about DMS. Immediate start in the North West. c £320.

**UNIVAC 90/30 PROGRAMMERS.**  
N/W c £300.  
O.R. expertise required. N/W c £320.  
CMC-Reality PROGRAMMERS. West Country c £310.  
BURROUGHS, DMS A/PROGRAMMERS, West Country. c £300.  
VAX, VMS PROGRAMMERS, Dublin £ negotiable.

**FREE!**  
ASK FOR A COPY NOW!

**MANCHESTER**  
**061 833 9341**  
(24 hours a day)

**1 Knight**  
Programming Support Limited  
No. 1 in Computer Personnel Recruitment  
Manchester, Adamson House, Shambles Square, Manchester M3 1RE.  
Birmingham, Kensington House, Suffolk Street, Queensway, Birmingham B1.  
021-643 8867/8



# THORBAR

(RECRUITMENT AND CONSULTANCY SERVICES) LIMITED

Greenock House 19 Cuckfield Road Hursleypoint Sussex BN9 9RF

Telephone: Hursleypoint (0273) 833848

SPECIALISTS IN DP AND EXECUTIVE RECRUITMENT

Ref: CW/49/80

## BRIGHTON

### SENIOR SYSTEMS ANALYST — SENIOR SYSTEMS PROGRAMMER (WITH MANAGEMENT POTENTIAL)

#### C. £10,000 P.A. + MORTGAGE SUBSIDY + BONUS

#### RELOCATION EXPENSES WHERE APPLICABLE

Our Client ARMCO FINANCIAL SERVICES EUROPE LIMITED have now established their European EDP Centre in Sussex and wish to identify two people to fill senior appointments within their Development Team. If you match the following requirements, contact us to make arrangements for an early interview:

#### SENIOR SYSTEMS ANALYSTS

- \* You will possess a minimum of four years' EDP experience with preferably the major part of this having been spent developing and working with the design and implementation of systems applicable to the insurance environment.
- \* We are particularly looking for a person who has sound experience in developing applications in the re-insurance and underwriting fields and is therefore able to undertake projects of this nature without supervision.
- \* Ideally you will have already proved ability to manage personnel by leading at least one major project from the feasibility stage through to full implementation.
- \* You will be expected to possess a high level of academic achievement.

#### SENIOR SYSTEMS PROGRAMMER

- \* We shall expect you to possess a minimum of four years' EDP experience with approximately two years spent in systems programming.
- \* You will be conversant with IBM operating systems, such as VM/CMS, VS or MVS.
- \* Any experience working with CICS will prove advantageous.
- \* You will be expected to possess a high level of academic achievement.

YOU WILL HAVE RECOGNISED THAT THE ABOVE REPRESENTS HIGHLY CHALLENGING AND OUTSTANDING GROUND FLOOR OPPORTUNITIES TO JOIN A GROUP DEDICATED TOWARDS EXPANSION IN THE U.K. AND EUROPE AND OFFERING SUCCESSFUL CANDIDATES THE ADDITIONAL ATTRACTION OF WORKING IN A VERY PLEASANT RURAL AREA.

(1324)

# THORBAR

(RECRUITMENT AND CONSULTANCY SERVICES) LIMITED

Greenock House 19 Cuckfield Road Hursleypoint Sussex BN9 9RF

Telephone: Hursleypoint (0273) 833848

SPECIALISTS IN DP AND EXECUTIVE RECRUITMENT

Ref: CW/47/80

## SINGAPORE — KUALA LUMPUR

### CONSULTANTS TO \$45,000 PA + RELOCATION EXPENSES

#### SINGAPORIAN AND MALAYSIAN NATIONALS WISHING TO RETURN TO THE ABOVE LOCATIONS AND POSSESSING THE EXPERIENCE CALLED FOR BELOW, WILL FIND THESE OPPORTUNITIES EXTREMELY ATTRACTIVE

Our clients, an International firm of Management Consultants, wish to recruit Singaporean and Malaysian Nationals to work in the above locations as permanent members of their rapidly expanding Practice.

We wish to speak to people who have spent at least five years in D.P. and who meet some or all of the following requirements:

1. A sound D.P. background, having progressed from programming to Systems Analysis through to a Project Leadership/Management role.
2. Good Hardware and Software experience, preferably gained from more than one manufacturer's equipment.
3. The ability to communicate well with all levels of user personnel and management.
4. Involvement in at least one large project from the feasibility stage through to full implementation.

PREFERENCE WILL BE GIVEN TO CANDIDATES WHO POSSESS A GOOD COMMAND OF THE ENGLISH LANGUAGE, HAVE BEEN EDUCATED TO DEGREE LEVEL, AND HAVE BROAD SYSTEMS AND APPLICATIONS EXPERIENCE RATHER THAN HAVING SPECIALISED IN ONE PARTICULAR AREA OF D.P.

IN RETURN, OUR CLIENTS OFFER AN EXTREMELY CHALLENGING CAREER WITH A WIDE RANGE OF ASSIGNMENTS AND THE OPPORTUNITY TO PROGRESS RAPIDLY TO PARTNERSHIP.

TELEPHONE OR WRITE TO US NOW IN ORDER TO ARRANGE FOR AN IMMEDIATE INTERVIEW EITHER IN LONDON OR THE SOUTH

# JBA

## MIDLANDS

### Senior Programmer/V77's

**Birmingham up to £8,000**

Our client is a large and successful international distribution group. They seek a Senior Programmer to bring V77 expertise into the computer department and play a major role in the development of distributed network systems and database applications supported by up to 30 V77's installed over the next 3-5 years. Applicants should have 2 years COBOL experience and must have had practical involvement in the use of V77 hardware and operational software. Excellent company benefits and working environment. **Contact: Mike Galtskell**

### Hardware Service Engineers — Minis

**London, Birmingham, Peterborough c. £8,000 + Car**

A highly respected mini computer company wishes to recruit experienced engineers for commissioning and maintenance work in the above areas. Practical knowledge of mini computers would be desirable but is not essential as full training will be provided as appropriate. Successful applicants must possess sound business sense and the ability to act in a thoroughly professional manner. These positions offer excellent career prospects for the right people. **Contact: Mike Galtskell**

**JAMES BAKER ASSOCIATES,**  
International Personnel Consultants,  
Gateway House, 50 High Street,  
Birmingham B4 7SY.  
Tel: 021-643 7865

(3367)

## Software Engineer

### Amsterdam

In our Research Laboratory in Amsterdam, more than two thousand people are involved in research and development of oil and chemical processes, oil and chemical products, and in engineering activities. In the Department of Mathematics and Systems Engineering, methods and procedures are being developed to enhance the effectiveness of all operations in the Shell Group, whether at the production platform, the refinery plant or the retail outlet.

Mini and micro computers play an ever increasing role in all these operations. The structure and quality of the design of such systems — hardware as well as software — significantly determine their final performance. Therefore, developments in languages for process control application software are subject to study as well as the underlying system software (currently Pascal, ADA, etc). In this field we have research openings for men and women with interest in the above areas and a University education in informatics or computer sciences who:

- Are able to develop new software concepts
- Are capable of converting such concepts into industrial applications
- Want to start their career in a large multidisciplinary laboratory of a Multinational Company

You will find the research particularly interesting in this new and expanding field, working in an open, pleasant and dynamic atmosphere. Salary is negotiable in line with your experience, and good prospects exist for career development in the Royal Dutch/Shell Group. Good fringe benefits are offered. If you are interested please contact, quoting reference 522, to:

Koninklijke/Shell Laboratorium, (C6),  
Personnel Department, Postbus 3003, 1003 AA Amsterdam-Noord,  
Netherlands.



(3338)

### FIELD SERVICE ENGINEER

Start £8,500 + Car + O/T + Benefits

A major American mini systems house is expanding its service organisation activities in London and Western Home Counties. This could be your opportunity to gain experience on a wide range of prestige minis and their applications, whilst enjoying the prospects only offered by a new venture like this. Start at £8,500 + car + overtime + benefits. If you are a service/customer engineer with good academic background, computer experience, live in one of the above locations, then take a big stride forward to an exciting career by calling today. Cons: Ref. EK2235.

AB EXECUTIVE 01-549 6441

(4227)

### DOVER GRAMMAR SCHOOL FOR BOYS

Number on Roll: 740

Required for January 1981 a

### GRADUATE

to take charge of Computer Studies in the School, which is well-equipped, and to teach some Maths.

Please apply direct to the Headmaster at the School as soon as possible.

Dover Grammar School for Boys  
Astor Avenue, Dover CT17 0DQ  
Dover 206117

## CHIEF PROGRAMMER

### Package to £9,000

### COUNTY DURHAM

Our client, a profitable subsidiary of a major international group of companies, has an impressive and continuing growth record. New on-line commercial and financial systems are to be developed based on modern ICL equipment; the latest hardware release is currently on order.

The client requires a programming professional to be responsible for a small programming team and to be the company's expert on all programming matters. This is a new post reporting to the Data Processing Manager and deputising for him in his absence. Candidates should have a minimum of four years solid COBOL programming experience involving exposure to software support and the development of on-line systems.

There are good general working conditions and company benefits. The area has reasonably priced housing and the Company will reimburse relocation expenses in appropriate cases.

To apply contact Roy Drury, quoting reference CW/8095 by telephone at Harrogate Office or evenings and weekends on Leeds (0532) 826949 or send brief career details to the Harrogate Office.

## Ivor Norton

### Management Services Ltd

RECRUITMENT CONSULTING DIVISION

**LONDON** 52, Shaftesbury Avenue, London W1V 7DE 01 734 8862  
**HARROGATE** P.O. Box 83, Capital Tower House, Harrogate HG1 1TS Harrogate 66628  
**GLASGOW** 11, Southwell Street, Glasgow G2 6LV 041 226 4611

(3338)

24 HOUR ANSWERING SERVICE (0423) 55311

## MINICOMPUTER

### FIELD SERVICE

**West Midlands**  
**negotiable £12,500 + CAR**

Our clients, a division of an established mini computer supplier, seek an experienced field service engineer for a unique opportunity.

The company is in the planning stages of the setting up of a field engineering operation. They therefore seek an individual to assist with the planning, introduction and management of this venture. In the longer term, management of this division will be the responsibility of the successful candidate.

An established background in field engineering based on DEC PDP hardware and software is required, and knowledge of CDC printers and disk sub-systems would be a great advantage.

The general conditions of this appointment are extremely good, including a profit sharing bonus and company car.

For a strictly confidential discussion, please contact Mike Hession. Ref: CW 287.

**COMPUTER PERSONNEL**  
**CONSULTANTS**  
18th Floor, The Rotunda  
Birmingham B2 4PA  
021-632 6848

# CPC

(2228)





## Salesmen — Top Dogs Only

LONDON, HOME COUNTIES AND MANCHESTER

Q.E. £20,000 + Car  
Are you a top dog but getting poor meat as your reward? Apply to UCA for a confidential discussion on the latest systems or hardware sales positions to tempt you. For instance, an American Mini firm offering quota earnings £17,500 or a new English Micro company offering a £10,000 basic! These are just a few of the tempting bones. So bark at us now. CW44/5 Michael.

## COMMUNICATIONS Engineers

London based £9,000 to £12,000  
Have you the sort of experience that enervates in depth one or more of the following: FILE TRANSFER, PROTOCOL, PACKET SWITCHING, NETWORK ANALYSIS, FILE TRANSFER, SYSTEM X, etc. If you have two years or more communications knowledge then this American computer engineering company will be very interested in you for brand new project work. Possibly some training in America. CW44/6 Michael.

## Micro Programmers/Designers

London/Home Counties £7,000 to £10,500 + Car  
Stand up all those with INTEL 8080 (or ZILOG 80) micro-based equipment programming or design experience. Now is your chance to use your undoubted skills to great advantage. A number of systems houses and similar manufacturing companies in S.W. LONDON, W. LONDON & HERTFORDSHIRE are expanding their resources and require your type of experience. Two of our clients offer European travel and company cars. CW44/7 Tricia.

## Contract Programmers/Analysts

To £450 p.w.

IBM	4331 COBOL CICS DOS	LONDON	3 mths.
IBM	370 COBOL PL/I	BEDFORD	3 mths.
IBM	8100	SURREY	4 mths.
IBM	4331 COBOL DOS	HANTS	3 mths.
H'WELL	L66 IDS TDS COBOL	HANTS	3 mths.
H'WELL	FORTRAN IV	GERMANY	1 yr.
IBM	PL/I OS TSO	HOLLAND	6 mths.

Phone Irene for details



Recruitment Consultants  
Universal Computer Associates Limited  
Data Express House,  
Prospect Place, London W4 3BR  
01-995 3883 (01-958 6138 Evenings)

## INTEGRATED SYSTEMS

c. £38,000 + 2-LITRE CAR

You are currently sailing with one of the major DP manufacturers, preferably London based, and are ready for your next move to this unparalleled WP/OP company acknowledged for its advanced computer technology in integrated office systems. Excellent benefits package including first-class support.  
Contact ROSEMARY FORSYTH.

## MINI COMPUTER SALES EXECUTIVES

c. £25,000 + 2-LITRE CAR

An opportunity to join one of the most outstanding mini computer manufacturers in the country. You will have a high success record to date in either hardware or software sales and be looking to work with hand-picked, ambitious, top professionals, who earn on average, in excess of £25,000. The equipment, probably the most highly regarded on the market, is fully compatible at all levels and offers a complete integrated office system as well as advanced software packages.  
Contact IAN PATERSON.

## SUB SYSTEMS SALES MANAGER

c. £19,000 + CAR

An excellent opportunity for a young experienced sales executive to begin to expand this area for our client's product range. You will be selling to small OEM and Systems Houses on a nationwide basis, operating from W. London. This is a developing position in a growth market with already successfully established products.  
Call ROBERT STORM.

## CHALLENGING D.P. OPPORTUNITY

£16,000 PACKAGE + CAR

A unique opportunity now exists to join a fast-moving highly successful company. You are stimulated by challenge, can account for your successful sales record to date and have experience of senior level sales.  
In return our client offers a highly competitive hardware package, virtually unlimited earnings, and the excitement of a rapidly expanding company.  
Contact CARRIE HAYWARD.

HODGE  
RECRUITMENT

01-629 8863

The growth of computerisation in building societies has led to recruitment and training problems. ALAN CHAPPELL, manager of computer operations at the Abbey National Building Society, defines the difficulties and offers some solutions.

# Over 40 building societies have own DP systems

THE impact of computer technology on the building society movement has been no less impressive than in other areas. The 1979 Register of Building Society Computers, published by the Building Societies Association, lists over 40 societies which possess their own computer equipment to which must be added a number of others who use bureaux facilities.

The very nature of a building society's business, with large numbers of customer accounts and high volume transactions, makes it a prime candidate for computerisation.

It follows, therefore, that most of the listed societies possessing their own mainframe equipment will almost certainly be involved, at some time or another, in the recruitment of data processing staff. I have no doubt that this statement may prove disagreeable in some quarters and that some may claim that they have always funded their DP function by internal recruitment and retraining. Within one society the DP manager claims that recruiting on the open market would be an admission of failure. While impressive, if true, I have considerable doubts about the actual practicality of such a policy.

## Development

The Abbey National Building Society has the largest branch network in the UK. Each of its 600 branches is linked via a telecommunications network to the main computer centre in NW London which houses a Sperry Univac 1100/82 system.

The total data processing workforce at Abbey National numbers just over 100, covering systems, operations and telecommunications. While this may appear a substantial figure, I should point out that it represents little more than 1% of the society's total workforce. As manager of computer operations my primary concern is naturally with computer operations, operations specialists, production control, librarians, etc., but as a Fellow of the Building Societies Institute, with 16 years experience and 10 of these in data processing, I feel reasonably well qualified to discuss the broader issue of data processing staff recruitment in the building society environment.

Abbey National's intention is that members of staff should be given every opportunity to develop their knowledge and skills and enhance their career. To this end, considerable effort is put into personal development and training while at the same time all vacancies are advertised internally.

It is a policy I wholeheartedly support and one which has enabled cross-fertilisation between data processing and other areas of the society, thus helping to break down the antipathy that can exist towards data processing in any organisation where prime function is not computer-related.

## Balance

The problem that arises for any data processing manager in this situation is that of maintaining a balance between experienced and trainee staff. Failure to do so, particularly in the face of increasing demands from users and increasing complexity of systems, is

der design or in operation, can lead down the road to disaster.

I am sure we would all like to claim that our "corporate staffing strategy" or "long term staff development philosophy" ensures that we are never in this situation. Unfortunately, real life is seldom like that, particularly in a building society where the percentage of data processing staff is likely to be small in relation to overall staffing levels. Although some critics would have it otherwise, building societies in general do pay close attention to their budgets.

Few managers, data processing or otherwise, can afford the luxury of a reservoir of trainees from which they can subsequently fill the gaps left by the departure of experienced staff, or fulfill urgent and unexpected demands from users.

Inevitably, one finds oneself having to go to the market in an attempt to attract experienced staff. This in itself presents a problem: does one advertise, use agencies or both? I have heard arguments for each side and must confess that I have not formed any strong views either way.

In general, Abbey National would select the former since it does provide wider coverage and a better catch, from which hopefully the right selection can be made. However, particularly where only one vacancy exists, this can be extremely expensive, because of the cost of space and the less tangible, but no less real, costs of following up applicants and conducting selection processes. On the other hand, an agency introduction fee can be high in return for which one is often faced with Hobsen's Choice, there being only one likely candidate.

## Selection

A useful (and free) source that the society has found extremely worthwhile are the Manpower Services Commission (TOPST) retraining courses. There are four operators on my staff who have been recruited from this source and while they could obviously not be called experienced, they have undergone a comprehensive basic training programme lasting from 12 to 18 weeks. This reduces the onus on the employer and enables the operators to pay their way more rapidly.

Selection processes must be considered very carefully by any manager. Interviews, although essential, are inadequate on their own and in my company a great deal of effort has been made in recent years to improve selection techniques. For example, an applicant for an operator vacancy would go through four separate stages.

Firstly, a preliminary interview with the personnel representative assigned to the data processing area; secondly, a specially selected operator aptitude test consisting of written exercises with strict time limits; thirdly, an informal walk down the computer suite with an experienced operations representative; and fourthly, comes the interview.

The third stage is most important when dealing with reputedly experienced operators. Placed in a familiar environment with a companion to whom he can relate, the applicant is relaxed and encouraged to talk, enabling his true knowledge of the equipment and

The interview can then be directed towards more general matters aimed at probing the applicant's character and attitude. Above all, honesty on the part of the interviewer is essential at this stage. The applicant must understand that the job involves working for a building society that has data processing function and in the other way round. Many applicants for positions in computer operations have given broken promises after the end of that language's life for new development work.

My own estimate is that, if Cobol were to be superseded today by a vastly superior language, Cobol programmers would still be needed for at least another 15 years.

The second answer is a recognition that all training is of obsolescence. This does not necessarily imply an acceptance of the view that we shall all eventually be put out of work by the

## Interests

The positive aspects of employment with the society should be stressed without creating false impressions. The operators' interest can be broadened by having them work outside their normal operating duties. It has proved successful in my company in an area in particular, this being preparation of lesson notes for a computer assisted learning package marketed by Sperry Univac. A team of operators has worked in this project for the last year, and in their own time, and a number of valuable lessons have been learned.

I have mentioned before the proportion of data processing staff in most data processing staff and seems sensible to make this point to the applicant who discards longer term career prospects. Given that over 98% of the society's staff do not work in data processing areas, that the average age in data processing is about early to mid-thirties and due to the attractive conditions of employment, staff turnover is high. It follows that the ambitious individual may fairly rapidly become demotivated. It is worth discussing whether the applicant's long-term ambitions lie in data processing or whether he or she has contemplated a building society career.

## Dilemma

The positive aspects of this alternative should be emphasised. I have to lose a talented and valuable member of my staff at some time in the future, I would rather he or she was lost to another area within the organisation than to the organisation altogether.

Building societies are, like most other organisations, faced with an interesting dilemma. There is a plentiful supply of trained applicants anxious to get started on a data processing career while experienced applicants are in short supply. However, if no one is prepared to take on the mantle how will the shortfall be compensated?

The overall breadth of staff among data processing staff is becoming increasingly important. For years they have been able to shelter behind the mystique of their trade, their position protected by the ignorance and replacement of the users and general management.

It is a short-sighted data processing manager who thinks this situation will persist. The computer revolution is reaching into all areas and the user is learning to ask the right questions. Data processing staff must react to this situation, widen their knowledge of the organisation's overall business and be prepared to cross boundaries if they are to maintain their position.

# Is technology changing computer jobs?

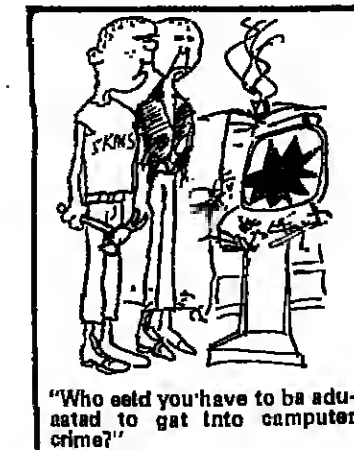
THE question is often put to me "Are you training people for redundancy?"

There are at least two possible answers, both equally valid.

The first is to note that the forecasts of redundant programmers date from the development of the first high-level programming language some 25 years ago. What those prophets failed to realise is that there is much more to programming than coding, and that computer users would become so heavily committed to a language, by their investment in applications software, that they would need programmers skilled in that language for maintenance purposes long after the end of that language's life for new development work.

My own estimate is that, if Cobol were to be superseded today by a vastly superior language, Cobol programmers would still be needed for at least another 15 years.

The second answer is a recognition that all training is of obsolescence. This does not necessarily imply an acceptance of the view that we shall all eventually be put out of work by the



computer. However, even if it did, one could surely rely on jobs with computers to be among the last to go.

## Naive

The two developments which are currently suggested as heralding the demise of programming are user enquiry languages and firmware. Both these suggestions are, in my view, as naive as the earlier prediction for Cobol.

An easy to use enquiry language is necessarily restricted to a small range of commands, each of which needs at least one stage of expansion before it becomes an instruction that the computer can obey; in other words the greater the simplicity to the user, the more sophistication in the software.

As for the firmware notion, it is at least conceivable that any software package which runs without modification on most of the models in a range, and for most users of that range, could be economically converted to firmware.

If we consider what a small proportion of applications, on any but the cheapest machines, consist of even modified packages, and this in spite of the ever-increasing cost and shortage of skilled programmers — this prognostication begins to look like no more than a tiny puff of smoke on the horizon.

## Expanding

How is technology changing computing jobs? For sophisticated real time systems, such as those used by the police and military, there is a rapidly expanding requirement for programmers able to use the real time languages such

as Coral or RTL2.

For the small user, there is the stand-alone micro with packaged software. This means an increased need for systems programmers in the supplier sector, although this is likely to have little effect on the general demand for or job content of the majority of user DP staff.

Several DP managers have suggested to me that the development of interactive systems needs programmers who are more attuned to the user's way of thinking. This is to say that programmers should become more like analysts and give a new twist to the continuing debate on whether it is better to have an analyst/designer and a programmer, whether to combine the functions, or whether to split them further into analysis, design and programming.

## Versatile

In the small to medium sized installation, there may be no choice; it is hardly likely to be acceptable, from the aspect of either economic or job satisfaction, for the work to be fragmented between three people.

It follows that the small installation — unless it is working entirely with packages, or sub-contracting its programming to a software house — needs a more versatile person and must therefore expect to pay more for the scarce resource. Analysis, design and programming each comprise multiple specialised tasks and related skills and knowledge.

There is no reason, in principle, why one person should not acquire all of these, just as there is no reason why a statistician should not be also an ornithologist, or a chess player also a golfer; but now enters the question, not just of abilities, but also of interest.

A current joint NCC study with Sheffield Polytechnic and Hatfield Polytechnic, on vocational interest has shown that while practising programmers and practising analysts tend to have many interests in common, they diverge sharply on the question of people-related and thing-related activities. The programmers clearly prefer the predictability of the machine, while the analysts respond better to the infinite variability of the human psyche.

## Annoyance

Now, according to the DP managers I mentioned above, the programmer should be capable of developing effective man-machine dialogue on the VDU.

One has only to look for an answer at the forms to be filled up every day, from government departments and other sources, which have been designed by supposed experts in obtaining information from people. Such forms will usually have gone through a pilot phase and then been modified, but still they cause puzzlement, irritation and downright annoyance.

Asking a machine-oriented person — a good programmer — to tackle such subtle and complex problems of human communication is on the same level as leaving form design (as so often happens, alas) to the typist.

Fortunately for the user — and that means industry and commerce in general — I see some strong signs of the opposite tendency. DP managers are increasingly recognising that communicating with users and interpreting their information requirements is a no less complex and specialised task than converting those requirements into machine-related form, and so are

All would agree that computer technology has had a profound impact on the job market as a whole. GEORGE PENNEY, careers projects manager at the National Computing Centre in Manchester, looks at the argument from a different perspective. He examines the effect that technological changes are having on the computer job market.

Says George Penney: "For someone entering DP, or already working in it, I would suggest that there is a need to make a personal assessment of preferences for thing-related or people-related activities. Equally, it is for the employer to analyse jobs into the two different tendencies".



In the meantime, these are some of the many high-status jobs in which DP staff can work their way up, so, perhaps, hastening the demise of the conventional operator-programmer-systems analyst-DP manager route.

For someone entering DP, or already working in it, I would suggest that there is a need to make a personal assessment of preferences for thing-related or people-related activities.

Fortunately the one or the other tendency, mechanical orientation or people orientation, can be assessed adequately by a skilled interviewer.

Technology changes; people do not. Technology is important, but people come first.

## Speed

However, back to technology: bringing lower costs, greater capacity, greater power and greater speed, technology permits ever more complex applications. An operating system needs systems programmers; a network needs a controller; a database needs a manager, and so on, it could be that in time such jobs will be so widespread and so well-defined that they will form either specialist undergraduate options or become degree subjects.

YES. Our new ICL 2956 VME/B installation is linked to our "Hotline" voice response system, and to ICL ME2's and 2903's at our key distribution and administration centres.

YES. It also features on-line processing, communications and has an capacity of 4 mega-bytes.

YES. We're committed to the redevelopment of existing systems, and to run these we will be using Distributed Processing, TP and Data Base.

YES. The additional equipment is already on order.

YES. The next five years will probably be the most challenging facing any major installation in the UK.

YES. We are based in Oxford, where the housing is realistically priced.

YES. Unipart are the market leaders in the supply of replacement parts and accessories for all makes of cars.

## Systems Project Supervisors.

Salary negotiable plus car scheme. To take full responsibility for a specified project from its inception through feasibility studies, to the final design specification and effective implementation. You will be controlling a team of around six Systems Analysts and Programmers. A minimum of four years Systems experience is essential, preferably gained in a warehousing/distribution environment. A high level of communicative skill is essential.

## Systems Analysts.

Salary negotiable depending on experience. A minimum of three years Systems experience, including one year as an Analyst/Designer, is required. You will be working on projects which will give you considerable scope to

utilize your experience in the definition of business problems related to specific projects, propose solutions, and be responsible for the production of full technical specifications to ensure their successful implementation.

The prospects for the future are related directly to our own plans for expansion, and the range of huge benefits is everything you would expect from a company of our size and reputation, including full relocation assistance where applicable. Call either Alan Burton or Brian Peaper, our Systems Development Managers now on their holidays: Oxford (0865) 713301/713660 or write enclosing a detailed C.V. to: David Morgan, Personnel Department, Unipart House, Oxford, OX4 2PG.

**UNIPART**

From the moment the question is asked there can only be one answer.





The Manpower Services Commission provides support for basic training in a number of computer skills. A recent working party concluded that

the demand for computer expertise outstrips its supply and this article shows how the MSC is attempting to match the shortfall.

# MSC's bid to train more computer staff

THE Manpower Services Commission (MSC) is making substantial funds available in 1980/81 to help industry to provide more basic training in computer skills. It is the second year of a three-year programme which offers more support than the MSC has given before for training in these skills.

The programme has been given high priority under the MSC's training for skills policy and exempted from the expenditure cuts which have affected other MSC operations.

The computer occupations training programme is designed to encourage employers to train more employees by offering grants for staff trained on specific courses in programming, real time programming and systems analysis.

Increase the number of opportunities under the Threshold Scheme for unemployed young people without specific academic qualifications; and

Increase the number of opportunities under the Training Opportunity Scheme for training unemployed people aged 19 and over in basic computer skills.

The programme was developed in 1979 following recommend-

tions of an MSC working party set up to devise training arrangements for computer skilled manpower.

A working party study showed that training output in these skills was no greater than 8 per cent of stock, that stock itself was 7 per cent to 15 per cent below the desired complement, that turnover varied from 9 per cent to 30 per cent among different sectors of industry and that future growth was expected at rates varying between 11 per cent and 25 per cent.

Clearly, training was neither sufficient to meet current needs nor making any contribution towards future growth.

A system of grant support for training and a group of suitable courses were developed within the MSC's training for skills action programme. Under this programme, all sectors of industry and commerce are encouraged to identify training needs and take action to meet them.

Assistance, including financial assistance, is available from the MSC, in particular for training in skills which are used in more than one sector of industry and are in short supply; computer skills are certainly cross-sector and scarce. At the same time, the MSC in-

creased the number of places available to unemployed young people and adults for training in computer occupations.

Earlier this year the manpower sub-committee of the Electronic Computers Sector Working Party, reported current shortages in most occupations among computer manufacturers, computer users, and computer services.

The shortfall of programmers and analysts was anticipated in all the sectors over the five years to 1985 and increased training was recommended.

The MSC's programme was therefore clearly in line with the needs of the labour market. As part of its normal monitoring of a training programme the MSC will keep this situation under review.

## Success

The element of grant-supported training in the MSC's programme was only in part successful in the first year: fewer than a third (330) of the grants available were taken up.

However, a number of changes were made.

In particular, it was clear that



Miss Denton, bring me the file marked "Computer courses/brochure brochures."

not enough employers were attracted to the 42 week initial programming course, based on the Threshold course which the National Computing Centre operates under the MSC's direction for unemployed young people.

It was generally thought to be too long, and although it is being retained, two shorter courses in programming have been introduced, for which a greater number of grants are available.

The courses for which grant support is offered to employers in 1980-81 are:

IP42 - this course in basic programming for new entrants lasts for 42 weeks, of which 18 weeks, in two 9-week blocks, are spent in a further education, college or

polytechnic. The balance of 24 weeks is spent with the sponsoring employer on planned practical and project work. This course is particularly appropriate for the school-leaver, and grant support is £1,500 per trainee. Those who reach a satisfactory standard at the end of the course are awarded the National Certificate of the Business Education Council (BEC - TEC), or its equivalent in Scotland.

IP12 - this is a short course in basic programming. It normally lasts 12 to 18 weeks, following broadly the syllabus of the joint NCC/City and Guilds of London Institute No. 240/241 Certificate in Computer Programming. Course providers may be able to

teach an additional language; if required, hence the varying duration of the course. The course is available at selected colleges, schools, colleges of further education and company in-house training centres. Grant support is £600 per trainee week in respect of trainees who are additional to employer's normal annual throughput of trainee programmers, assessed over the previous two or three years.

IP18 - this is another basic course in programming, consisting of the 18-week block elements of the 42-week IP course described above, plus a self-standing course in data entry, with no obligation on the employer.

Turn to page 21

## Employers need to give on-the-job experience

From page 20

to provide the planned in-house experience necessary to complete the full BEC/TEC syllabus. The course may be put on by commercial computer training schools and company in-house training centres as well as by colleges of further education.

It is suitable for the new young entrant to DP, since it sets out to provide a wider appreciation of data processing as well as programming techniques. Grant support is £600 per trainee week in respect of trainees who are additional to their employer's normal annual throughput of trainee programmers, assessed over the previous two or three years.

ing practical project work, and a further period of instruction in college.

The scheme has been successful from its inception and placing results are good: 90 per cent of trainees are placed in computer occupations, often with the employers who offered places for the "industrial" attachment periods of the course.

The number of Threshold places was substantially increased in 1979 as part of the MSC's expanded programme of training in the light of its working party report: 1,000 places were funded in 1979-80, and this was further increased to 1,200, to maintain the target of trainees in spite of the low take up of places under the grant-support scheme. This year, the target is 1,400.

One of the important features of Threshold has been the demonstration that high academic ability is not an essential qualification for computer programming.

Training in computer related occupations has been offered to unemployed adults under the MSC's Training Opportunities Scheme (TOPS) for several years, and numbers trained have been increasing all the time.

## Grants

Provision covers the main occupations most widely found in computing, viz computer maintenance engineering, systems analysis, programming, operating, data preparation and data entry.

TOPS pays course fees, living allowances, accommodation and daily travelling allowances. Grants are made towards the cost of essential books and equipment. Trainees must be aged 19 or over and have been out of full-time education for at least two years.

About 80 per cent of the training is carried out in private sector establishments and the rest in CFEs. Courses are very successful with high placing rates. Analysis of follow-up enquiries about the 1978-79 trainees (three months after the end of training) shows that between 80 per cent and 89 per cent of trainees in analysis, programming and engineering were in employment and using the skills taught.

## Commissioned

In the current year (TOPS operates on financial years and not training/academic years) the target for completion in training for computer-related occupations is 4,000. This compares with some 3,200 completions in 1979-80 and 2,000 in 1978-79.

The MSC has commissioned a survey designed to establish employers' recruitment practices and pre-entry training requirements so that decisions can be made about the structure of future courses. What-ever the outcome, it should be emphasised that all MSC-supported training for computer skills is and will be at a fairly basic level.

Because of the rapid growth of computer applications, the labour market simply has not got as many experienced people as employers want or would like.

There is no way to create such staff other than by giving basic training followed by working experience. The MSC is doing a great deal to help provide the former: only employers can provide the latter.

The MSC sees as essential the development of more employment-based basic training and hopes that the incentives it is giving to this within its joint programme will encourage employers in that direction.

## Shortage

Real Time Programming - a course of up to 24 weeks' duration has been designed to help to meet the growing shortage of real-time programmers. No formal training at this level has been generally available hitherto. The course is available at a limited number of CFEs and polytechnics and in certain company in-house training centres. Grant support is £70 per trainee week.

SA10 - this systems analysis course, normally 10 weeks long, was developed in response to evidence that many people with varying business experience but little or no previous data processing experience could, after suitable training, become a valuable addition to the supply of trained systems analysts.

A four-week introductory module prepares trainees for the six-week training of the NCC's well-established course in systems analysis. Training is to the standard of the Systems Analysis Examination Board of the British Computer Society, grant support is £80 per trainee week and courses are available at some CFEs, polytechnics, commercial computer training schools and in-house training centres.

SA6 - the NCC's six-week systems analysis course referred to above may also attract grant support at the same rate (£80 per trainee week) in respect of trainees who are additional to their employer's normal annual throughput of trainee systems analysts, assessed over the previous two or three years. Courses are available at some CFEs, polytechnics, commercial computer training schools and in-house training centres.

## Recruited

In all cases, trainees may have been recruited externally by the employer, or from amongst staff already employed by him.

The scheme is administered by industrial training boards and, in industries and services not covered by these boards, by the National Computing Centre acting as agent for the MSC or by the MSC directly.

The NCC also operates a "clearing-house" for the scheme, to bring together providers of courses and unsatisfied demand for places. The Threshold Scheme for unemployed youngsters was introduced in 1976 with 200 awards rising to 550 by 1978. Awards include payment of college fees and a weekly allowance (now £26) to the trainee.

After a common core of college, trainees are selected for either operator (training or programmer) training during the rest of the course; this consists of two periods of "industrial" attachment, involv-

## A FUTURE IN SCOTLAND

The following list of opportunities is for the following DP staff:

### COMMERCIAL PROGRAMMING

IBM Job Programmer - Central Scotland - Midlothian school  
IBM Job Programmer - Edinburgh area - Edinburgh school  
IBM Job Programmer - Glasgow area - Glasgow school  
IBM Job Programmer - West coast - Dundee manufacturing company

### TECHNICAL PROGRAMMING

IBM Software Programmer - Central Scotland - Midlothian school  
CICS Analyst Programmer - Central Scotland - Midlothian school  
DPS Analyst Programmer - Central Scotland - Midlothian school  
IBM Job Programmer - West coast - Dundee manufacturing company  
IBM Job Programmer - West coast - Dundee manufacturing company  
Sales Support - Edinburgh - Dundee manufacturing company

### ANALYSIS

Commercial Systems - Central Scotland - Midlothian school  
Manufacturing Systems - West coast - Dundee manufacturing company  
Commercial/Manufacturing Systems - West coast - Dundee manufacturing company  
Commercial Systems - West coast - Dundee manufacturing company

For details of these and other vacancies please John Jennings on 031-226 5889, to arrange a location interview to discuss your requirements, or write to: OML Computer Personnel Services, 11 Charlotte Square, Edinburgh EH2 4DR. Please quote Ref: HP/77/E.

## Data Processing Manager

Cheshire Circa £11,000

This is an excellent career development opportunity to manage a small department providing a comprehensive and technically advanced data processing service, utilising a Systems 34 facility. Relevant experience must be matched by commercial awareness and the ability to communicate effectively with user departments.

The successful candidate will be a self-motivated person capable of developing and maintaining computerised systems in manufacturing, commercial and financial applications. Experience in RPLC programming, systems design and analysis and operating must have been gained in an industrial environment. This client is a profitable company with an international group, and it is envisaged that the appointee will be involved in travel to other European subsidiaries.

Benefits include a non-contributory pension scheme and relocation expenses will be paid where applicable.

Male/female candidates should apply for our confidential form quoting Ref: 357/CW.

**Wickland Westcott & Partners**  
Management & Executive Recruitment/Selection  
24 Manchester Road, Wilmslow, Cheshire, SK9 1BC.  
Telephone: (0625) 532446 (24 hours).

## COMPUTER WEEKLY CLASSIFIED

01 261 8028/8097/8019  
the newspaper computer people rely on

## FIELD SERVICE ENGINEER

Start £8,500 + Car + O/T + Benefits

A major American mini systems house is expanding its service organisation activities in London and Western Home Counties. This could be your opportunity to gain experience on a wide range of prestige minis and their applications, whilst enjoying the prospects only offered by a new venture like this.

Start at £8,500 + car + overtime + benefits. If you are a service/computer engineer with good academic background, computer experience, live in one of the above locations, then also a big stride forward in an exciting career by calling today, Cons. Ref. EK2235.

AB EXECUTIVE 01-549 6441

## Computer Operations Manager: Hong Kong

c. £18,000 tax free + benefits

The Hong Kong and Shanghai Banking Corporation seeks a Computer Operations Manager to manage its two major computer centres in Hong Kong. The present configuration includes two IBM 3033 CPUs, two IBM 3082 CPUs and 1800 on-line terminals; the department has 100 staff engaged in computer operation, support, production control and network control functions. In their 30s, candidates should have already held a senior position in a large IBM computer centre providing on-line services and using OS/VS1 or MVS. Attractive benefits include free furnished accommodation, six weeks' home leave, medical expenses and children's educational allowances to include two return passages each year. Salary will be around HK\$220,000 per annum tax free. In

mid-October this equated to around £18,000. The initial contract period is two years with an option, if mutually agreeable, to join the permanent staff thereafter. Short-list interviews will take place in London in late November/early December and the successful candidate will be expected to start work in Hong Kong at the beginning of February 1981.

Ref: TE517/485/CW  
Initial interviews are conducted by PA Consultants. No details are divulged to clients without prior permission. Please send brief career details or write for an application form, quoting the reference number on both your letter and envelope, and advise us if you have recently made any other applications to PA Personnel Services.

## PA Personnel Services

Hyde Park House, 60a Knightsbridge, London SW1X 7LE. Tel: 01-235 6060 Telex: 27874

0702-615551/2

**TASK FORCE**  
Computer Consultants & Personnel Services

0782-410217/8

## WORKING WITH TASK FORCE

If you have good relevant experience you too could join TASK FORCE. Our solution to staff shortages is to provide the best deal for our clients. With TASK FORCE you will work as part of a friendly professional team, we will give you more cash in your pocket, more work and more benefits. Contract or permanent, you have the option - this is how it works.

## ON A CONTRACT BASIS

-We will pay you very competitive rates, give you regular work, training and security.  
-If required we will set you up as a limited company. This gives you complete control of your tax payments and means you could pay much less.  
-A free counselling service by Qualified Accountants is provided for your personal and company tax problems.

-We will solve your administration headaches, your company set up, book-keeping, invoicing, accounts and tax returns will be done for you by professionalists as a free service.

-You benefit on registration for VAT (we of course administer the accounts), on lease or arrangements, on sickness insurance, and on pension plans.  
-Holiday payments, contract bonuses and retainer deals can be negotiated.

## ON A PERMANENT STAFF BASIS

Salary negotiable circa 10K + company car, training, security and all company benefits.

A.M. **TASK FORCE** LTD.

2 Southchurch Road  
Southend-on-Sea  
Essex SS1 2NE  
Tel: Southend-on-Sea  
(0702) 615551/2  
Telex: 898042

★ ★ ★

ICL ANALYST/PROGS.  
1900 DJ DME COBOL  
FORTRAN FILE TAB

ABU DHABI  
£450 p.w. + Accom.  
Tax Free

★ ★ ★

IBM	PLI AND ASSEMBLER PROGS.	ESSEX £275 p.w.	IBM	OS/VS1 VM CMS SOFTWARE PROGS.	ESSEX £325 p.w.
IBM	OPS ANALYSTS JCL WRITERS IBM OS	YORKS 6 mths. + Ex Rates	IBM	ANALYSTS/PROGS. IBM ASSEMBLER	YORKS 6 mths. + Ex Rates
ICL	TECHNICAL SUPPORT 1900 GII	WALES 3-8 mths. Ex. Rates	ICL	SOFTWARE PROG. 1900 GII WITH COMMS EXP.	ABU DHABI £500 p.w. + Accom. Tax Free
ICL	2900 VME/B 290 3/4 P.LEA ANALYSTS, PROGS.	S. AFRICA £ neg.	ICL	2900 IDMSX SOFTWARE PROGRAMMER	ABU DHABI £800 p.w. + Accom. Tax Free
ICL	2900 VME/B IDMS PROGRAMMERS	ABU DHABI £475 p.w. + Accom. Tax Free	ICL	2900 VME/B OPERATORS	ABU DHABI £400 p.w. + Accom. Tax Free
ICL	1900 GII/DME OPERATORS	ABU DHABI £400 p.w. + Accom. Tax Free	ICL	2900 TECH SUPPORT BASE, DUM. CRASHING CORRS EX22 EX23	ABU DHABI £450 p.w. + Accom. Tax Free

★ ★ ★

ICL ANALYSTS & PROGS.  
2900 EXPERIENCE

NORTH WEST  
Long Contract

★ ★ ★

**PERMANENT** All levels of DP positions in all parts of the UK.  
Contact us for your next appointment

A.M. **TASK FORCE** LTD.

44 Kingsway  
Stoke-on-Trent  
Staffordshire ST4 1JH  
Tel: Stoke-on-Trent  
(0782) 410217/8  
Telex: 887253

Send CV or return this coupon:

NAME

ADDRESS

TEL. NO.

INTERESTED IN:



# Science graduates are still the favourite with most employers

EEI has begun by trying to get some idea of the size of the computer job market for graduates.

No separate statistics are published for the number of graduates who start computer work but I was able to obtain, by courtesy of the Universities' Statistical Record, a detailed breakdown of the university graduates who entered the three main types of computing work in 1977-8, the latest year available. Table 1 lists the 'top ten' subjects, excluding combined degrees, for first and high degree graduates of both sexes. Computer studies as a degree subject is included under mathematics in the statistics. There were 523 graduates in 1977-8.

## First job

The 1,922 graduates who obtained computer jobs represent 74% of the 2,603 graduates listed under the Management Services classification in the section headed First Destination of University Graduates 1977-8. Applying the same percentage to the 369 polytechnic graduates listed under this classification in Polytechnic First Degree and Higher Diploma Students 1978 gives a figure of 273.

The total number of graduates who obtained computer jobs in 1978 is therefore about 2,200. Demand has been rising at about 20-25% per annum in recent

years and many employers say they are unable to fill all their vacancies.

I would therefore estimate that there are probably 3,000-3,500 graduate vacancies in computer work in 1980. To put this in perspective, it is about twice the demand for mechanical engineers and a little less than the demand for chartered accountancy trainees.

Computer manufacturers and service companies are the big recruiters in the sense that they want large numbers of graduates for computer work. One application may therefore give access to more than a hundred vacancies. The larger ones, such as service companies Logica and CAP, recruit and train new graduates on a larger scale.

Computer users may be big recruiters in terms of total graduates hired but the number of specific computer vacancies each has is much less. Graduates looking for a job in this group may need to make many applications. However, although the vacancies are widely spread this group accounts for around half to three-quarters of the total computer vacancies.

The jobs most commonly offered to new graduates are as computer programmers, systems analysts and computer operators. The relative availability of these three jobs is illustrated in Table 1. The predominance of computer programming is partly due to the

fact that many employers use this as an entry job and only transfer graduates to other work after a couple of years' programming experience. Unless you can convince these employers that you are likely to make a reasonably competent programmer, you won't get anywhere.

Under the general heading of computer programming, the work can vary considerably. In some cases, it may be mainly short programs which the new recruit can quickly learn to write, largely on his own. In other cases, programs are so large that a team is needed; the

create a big workload in adapting existing programs to fit the new system.

Different types of programming work suit different temperaments. Applicants should therefore try to find out during interview which type predominates, so that they can judge the relative attractiveness to them of working for that particular employer. A large company may well have all types going on at the same time. The key question then is how much say the individual programmer has in the jobs he is given to do.

What qualities does an employer look for in an applicant?

**Management consultant and adviser to the Standing Conference of Employers of Graduates, WILLIAM PRENTICE shows how 1977/78 graduates fared in computer work.**



beginner may work on only part of the program and under close supervision. Some programs can be assembled by stitching together several more or less standard subroutines; others require development of new methods. In companies with a large library of established programs, much programmer time may be expended just in keeping them up to date with changing circumstances. Introduction of new computing equipment may

can? Some are intellectual skills: power of analysis, logical thinking, accuracy, attention to detail and, of course, numeracy.

But programmers also need a considerable amount of social skill. Problems which arise during the writing of a program have to be discussed with suppliers of input data and/or program users. The programmer must be able to deal effectively with people at many levels and, when necessary, persuade them

Degree Subject	Computer Programming	Systems Analysis	Computer Operation	Total
Mathematics	710	97	34	841
Physics	93	36	4	133
Elect. Eng.	36	15	1	52
Chemistry	39	12	1	52
Geography	19	11	1	31
Economics	37	7	3	47
Biology	33	11	1	45
Bus. Studies	20	20	2	42
Geology	24	6	2	32
Psychology	18	5	1	24
Others	1057	237	55	1349
	451	84	38	573
	1500	321	93	1922

Source: Universities' Statistical Record: private communication.

Table 1. University graduates entering computer work, 1977-78.

to accept his proposals. In addition, programmers often have to work in teams on particular projects.

Recruiters use interviews and other selection methods to judge an applicant's social skill. With the exception of specialist jobs, provided an applicant does well in their own selection procedures, most employers are relatively uninterested in the degree subject, class of degree and whether at first or higher level.

At first sight, Table 1 appears to give the lie to the statement that many computer jobs are open to graduates of any discipline. The 'top ten' is dominated by science graduates and, in fact, when the 'other' disciplines are analysed, one finds that about 80% of all recruits in 1978 had degrees in pure or applied science. Nevertheless, many employers would like to recruit more non-science graduates: not only is there a shortage of scientists, but only a proportion of science graduates possess the requisite social skills.

Indeed, more applicants are rejected on this count than because they fail the aptitude test. The total annual output from UK universities of physical scientists (12,000) is slowly beginning to increase but there is a

shortage of engineers and therefore, intense competition for them. The output of the less numerate disciplines is much greater: arts (19,000), social studies (25,000) biological sciences (8,000) — a total of 52,000.

## Volatile

Starting salaries for computer work obviously vary from employer to employer but, on the whole, to be at the top end of the graduate spectrum. The market is volatile, making it hazardous to quote figures, but my guess is that most firms are now offering a base salary in the region of £4,500-£5,000. During the first two or three years, salaries in computing usually rise more rapidly than in most other fields. Thereafter, salary progression tends to depend on individual performance rather than fixed scales.

The argument that computing is a good starting-point for a broad business career is not borne out by my observation. Few graduates seem to leave computing once they start. They may leave their first employer, for job mobility is common, but most go to another computing job elsewhere. Those who want a broad career should start by seeking other parts of the business — computing is catching!

# Systems Programmers

## Now there's a new focus for your talents

**BNOC  
3033N  
MVS**

The British National Oil Corporation has just installed an IBM 3033N mainframe. This machine, running under OS/MVS, is the focal point of an impressive distributed network utilising Hewlett Packard 3000 systems. The introduction of the 3033N marks the transfer of central computer power from an external bureau into our own DP department, a reflection of both the growth in demand and the need to provide increasingly sophisticated facilities for our engineers and technologists.

To provide the necessary support functions for this exciting development, we are recruiting a Systems Programming group which, we believe, can and will become one of Britain's most expert MVS teams. The group will be responsible for:—

- the support of MVS, systems utilities, compilers and facilities such as TSO/SPF
- the support of communications software including ACF/VTAM
- the introduction of RACF
- performance tuning
- capacity planning.

## MVS Team Leader

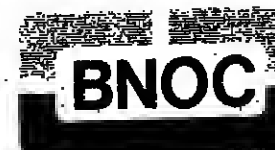
... with at least 10 years in Data Processing including 6 years in Systems Programming and at least 2 years in OS/MVS plus section or team leading experience. He or she will ensure that the group provides the necessary support of production services to maintain a high level of service. Top-level salary envisaged.

## Systems Programmers

... senior and junior but with at least 2 years OS/MVS or OS/VS1 experience. Salaries negotiable according to experience.

The posts are all based at BNOC's Glasgow headquarters, and offer the opportunity to move, with generous assistance, to the West of Scotland with all its natural — and financial — attractions. Prospects are excellent in a company which already has a £400 billion turnover and a still accelerating growth pattern.

To find out more about these posts telephone David Sheildrake, our Systems Support Manager on 041-228 8888 Ext. 3623 or please write stating which position is of interest to you and quoting ref/KWM/CW to: Ken Mearns, Divisional Personnel Officer, The British National Oil Corporation, 180 St. Vincent Street, GLASGOW G2 8LJ.



**The British National Oil Corporation**

Recruitment



in Informatics

## IBM SNA & VTAM Specialists

Copenhagen: Salary to £20K

A renowned Nordic Turnkey and Systems Supplier is seeking several well qualified IBM orientated Distributed Processing Specialists. The positions offered are located in Copenhagen and will be on a permanent career basis. Candidates must therefore be prepared to relocate to Denmark for a substantial period. Technically you should offer extensive Systems Programming experience with IBM 3270 Display Terminals or IBM 4100 hardware in a Distributed Processing environment. Mainframe experience is also beneficial particularly with IBM 370/303X, VTAM Communications Access exposure. Our client has expressed a desire to recruit candidates with developed project control and leadership skills. First interviews will be held shortly in London after which short-listed candidates will be invited to Denmark for final selection. Ref: L/44/A

## Software Support-Graphics

Home Counties: Salary to £8K + Car

One of the market leaders in the manufacture and sale of graphics terminals and instrumentation devices has a requirement for Analyst/Programmers. Successful applicants will be involved in pre-sale support, the installation of software packages and training customer personnel. Candidates should offer at least two years' Fortran programming experience, preferably supplemented by C.A.I. exposure. It is anticipated that you will have a background in Mini-computers, but specific hardware experience is not important. In addition to competitive salaries, our client also offers a company car for all positions. Ref: L/44/B

## Communications & Telephony

German Speaking: Package c. £20K

System X is universally recognised as THE telecommunications system for the 80s and 90s. Such is the respect that Continental Europeans hold for System X that many of the Communications and Telephony Specialists who have developed the software are now in great demand. Our client, a leading Turnkey Supplier to European and Third World P.T.T.s has an immediate requirement for Communications and Telephony Specialists with current involvement in public telephony systems and digital networks. Particular hardware exposure is less relevant than applications knowledge but familiarity with PDP 11, VAX 11/780, Intel 8085/8 or Motorola 6800 will be a distinct advantage. Successful candidates will be well remunerated and will receive an excellent relocation package. It is useful, but not essential to speak German. Ref: L/44/C

## Database Analysts

Thames Valley: Salary to £13K + Benefits

A renowned International Supplier of Teleprocessing and Database Systems has requested LOGISTIX to identify and recruit several IBM orientated DB Analysts for its Regional Headquarters. Applications areas will include manufacturing, production and materials control, scheduling and trend forecasting. Software involvement will ideally have included one or more of: IMS, IDMS, RAMIS, TOTAL, DBOMP or MAAPCS. A feature of these positions is the high degree of client contact in the form of seminars, product demonstrations, feasibility studies, reporting, time implementation and problem solving. For some positions candidates are not required to live locally although it is an advantage to reside within 25 miles of Reading. Ref: L/44/D

## IBM Programmers

W. Germany: Salary to £17K

A multinational organisation with offices throughout Europe has requested LOGISTIX to identify and recruit five Applications Programmers for its IBM 4341 installation in W. Germany. It is essential that all applicants have a good programming background gained on any IBM mainframe computer. Of particular interest will be candidates who have working knowledge of COBOL, Assembler or PL/I. However, if you have experience of any other commercial language, you should not be deterred from applying, as excellent in-house training will be provided. These positions represent an outstanding opportunity for career-minded individuals to enhance their technical skills whilst at the same time enjoying the diverse cultural benefits of another society. Ref: L/44/E

## Telephony — Software Designers

W. Home Counties: Salary to £12K

An established world leader in telecommunications products is seeking Software Designers and Senior Software Designers to join project teams at its recently opened U.K. offices. With a growth record second to none and a planned European-wide expansion programme the company is able to offer outstanding career opportunities. At least two years' experience in the design and development of specialised software for PBX or PABX systems is essential. Particular hardware experience is not important but familiarity with PDP11 or a leading microprocessor would be advantageous. Candidates able to demonstrate a knowledge of digital hardware concepts will be especially welcome. Ref: L/44/F

## Small Business Systems

Greater London: Salary to £10K

A small but expanding Total Systems Supplier urgently requires Programmers and Analyst/Programmers to assist in the development of bespoke software for its varied client base. At least 2 years' Basic, Basic + or Assembler programming on any leading mini-computer is essential. Preference will be given to those applicants with exposure to Prime, DEC or Data General hardware. Analyst/Programmers with knowledge of accounting procedures will be particularly welcome. A considerable client liaison is a feature of all the positions offered. It is likely that successful candidates will possess highly developed personal communications skills. Ref: L/44/G

Logistix, 10 Grenville Place London SW7 4RW

01-373 3063



Telex: 28800

(2284)

FACILITIES MANAGEMENT BUSINESS SYSTEMS CONTRACT STAFF SUPPORT RECRUITMENT CONSULTANCY  
SOFTWARE PACKAGES COMPUTER SECURITY  
CONTRACT STAFF SUPPORT RECRUITMENT CONSULTANCY BUSINESS SYSTEMS SOFTWARE PACKAGES

# HEXAGON PERMANENT DIVISION

## APL PROGRAMMER-ANALYST

West End Totally Negotiable

- ★ Assist in setting up new DP Department.
- ★ Preferably APL/VM/CMS.
- ★ Large Information System to be installed using RT Interactive TP.
- ★ Very good career progression.

Quote Ref. DJ 80178

## PROGRAMMER ANALYST

HOLLAND

- ★ Three years' COBOL
- ★ Must have experience of CICS
- ★ Salary review 1st Jan
- ★ Good bonuses + benefits.

c. £13K

Quote Ref. DJ 80195

## REAL-TIME DESIGNERS — DEC

Central London

- ★ RT Systems Design and Software Experience
- ★ Banking, Message Switching Applications
- ★ Good career prospects within a progressive Company

£8-17K

Quote Ref. DJ 80193

## ANALYST PROGRAMMER

BANKING: Central London

Package to c. £15K

- ★ Flexible, Dynamic, Professional.
- ★ Some European Involvement in a Varied Machine Environment, IBM, DEC, BURROUGHS.
- ★ Experience of IBM Hardware a definite advantage.
- ★ Dealing in a wide variety of Banking Applications.
- ★ Package includes Cheap Mortgage, Bonus Scheme, Non-Contributory Pension.

Quote Ref. DJ 80192

## ANALYST

Victoria

- ★ Oil Company
- ★ Minimum of 3 years' commercial Analysis, with a stable work record.
- ★ To work on Real Time Database applications.
- ★ Great Company and working atmosphere.

to 12K + Perks

Quote Ref. DJ 80188

## PROGRAMMER ANALYST — COBOL

Uxbridge

- ★ Programmer to move into Analysis over the next nine months.
- ★ Preferable experience on Data General Machines.
- ★ Good career prospects.

c. £8½K

Quote Ref. DJ 80194

**HEXAGON**  
computer services

145 WATFORD STREET, LONDON W3 3TB

TEL 01-438 3671



## Senior Systems Development Staff

Fore major financial institution with a reputation as a leader in the field of life assurance, pensions and investment planning. Due to continued expansion, a number of significant opportunities have arisen in the company's head office located in an attractive part of the West of England.

### Systems Consultants to £12,750 + Car

To play a leading role in the definition and analysis of complex business problems and the formulation of efficient systems solutions. Ideally candidates will have had at least 5 years substantial large systems experience with a demonstrable record of successful implementation. Initiative, self-confidence and a combination of business flair and strong analytical abilities are prerequisites. Preferred age is under 35.

Ref. G861/1

### Business Systems Consultant to £12,750 + Car

Acting as an adviser to senior management, the appointee will initiate and complete a wide range of high level assignments across the whole spectrum of Business Systems work and will assist with the longer term planning of the Company's Admin. System. Applicants should have considerable experience of conventional business systems techniques including O & M, Methods Study, CWM and equipment evaluation. A knowledge of 'office of the future' methodology and a degree or formal Business Studies or O & M qualification would be additional advantages. Preferred age is 27-38.

Ref. G861/2

### Systems Analysts to £11,800

Developing advanced computer systems has always been a major factor in our client's success. Analysts with a flair for the business side of systems development, who are alert, self-motivated, and determined to build a worthwhile career will find the right sort of challenge. Strong analytical skills, drive and creativity are essential. Experience is less important than ability, but 2 years solid systems analysts experience is a minimum.

Ref. G861/3

All appointments enjoy substantial fringe benefits including a non-contributory pension, free life cover, BUPA, a profit sharing scheme plus an excellent relocation package.

**TO APPLY:** Please send a CV or write or telephone for an application form to JOHN KITCHEN, Executive Selection Division at the address below quoting the appropriate reference. Applications are invited from either sex.

BIS Applied Systems Limited  
York House, 199 Westminster Bridge Road  
London SE1 7UT  
Telephone 01-633 0866

**BIS** Applied Systems

# Points to watch for an engineer who wants a career in selling

I WAS recently discussing with a senior sales manager from a principal computer manufacturer the implications of employing sales trainees. The question was which kind of recruit stood the better chance of success, an experienced salesman with no product knowledge, or a product specialist with no selling experience.

My client had no hesitation in answering "I'll need a year to give relevant product skills to an experienced salesman and five years to teach a technician how to sell."

I must say, I felt no inclination to dispute his statement. I work for an organisation that specialises in the recruitment and training of salesmen and, from time to time, we are involved with the location of sales trainees for manufacturers of computer systems and supplies of computer services.

We generally divide the experience criteria we are seeking in candidates into three categories. One, three more years' selling experience within an industrial or commercial environment, particularly related to capital goods or technical services.

Two, comprehensive knowledge of a particular business process within a specific industry. Three, direct involvement in the use of computers at the hardware and/or software level, as opposed to being merely a user.

## Reality

These categories are rated 30%, 30% and 20% respectively in the context of experience criteria. We do not normally call for interview any candidate with a total qualification of less than 30%.

While this approach might appear less discerning than the attitude taken by my client, it emphasises the reality that it takes considerably longer to become a truly effective salesman than it does to become sufficiently conversant with a specific product to be able to identify its user benefits within the sales situation.

Often I meet technical people who are thinking of moving into selling on the broad justification of "How come he's earning so much more than me for simply travelling around and getting on well with people? He obviously has less technical competence than I and no greater personality, so why don't I get into selling it? It looks like an easy life."

## Misleading

Such a conclusion can only suggest one or both of two misleading things - either the technician has no fundamental understanding of the qualities and responsibilities of a salesman or has never had any extended exposure to a true sales professional.

I don't intend to fall into the trap of compiling a dissertation into "what selling is all about", but it is important for engineers aspiring to a sales career to understand some of the functions and qualities that are essential ingredients of the salesman's role.

Prospecting is the process of identifying from cold the right individuals who have a requirement for your product, making a direct approach to that individual and persuading him by way of the telephone or direct approach that he should give up some of his precious time to discover why it will be to his advantage to buy whatever you have to sell.

Don't expect to be given prospects; the salesman's job is to find his own. The occasional bonus of prospects can only be regarded as a bonus. One has to accept the fact that a salesman is a hunter, not merely a skinner.

## Closing the sale

Selling is not merely the process of enabling the potential buyer to fully understand the product; it is getting people to like you and your product.

Nor is it about highlighting the product benefits and the advantages to the buyer. Furthermore it is not about being the best product at the best price on the latest delivery.

All of these things help in the final analysis, it is about being the order and getting it. It would be surprising how many intending salesmen fail because they simply cannot bring themselves to ask the buyer for the order.

## Organisation

The successful professional salesman is a highly organised self-managing person who carefully plans every aspect of his activity, he calculates, controls, manages, self-trains, perfects, or individual client or company.

The salesman cannot operate efficiently without knowing the facts and he will never know them unless he has the talent to create an empathetic environment for negotiation, make the right questions, interpret the real meaning of responses he gains, the needs, desires, the reasons why, the fact that how to be filtered from the innuendo of language and action.

They may sound a bit grand but that's the way it is for the sales professional. And it is a suggestion a need for understanding human behaviour and psychology it's that as well.

The big difference between selling and most other jobs is that the salesman is constantly involved in making work for himself. He identifies his own prospective clients, decides whom he will visit, chooses what time he will start, what time he will finish. Selling is the epitome of initiative.

## Commission

One of the major factors that attracts many people into selling is the principle of having reward commensurate with achievement.

It is something which has no completely the reverse effect on an even greater number of sales professionals. In other words, you only earn a high income if you succeed. If you fail you might have been better off working in a car wash.

"So what has all this got to do with engineers in general and computer engineers in particular who are considering a move into selling?" I hear you ask.

I mentioned some of the functions and personal qualities demanded of the job, so first you have to ask yourself if you could handle those types of activities and those kind of talents. If you believe you have, the next step is to see if you have the appropriate qualifications.

Going back to what I was saying at the beginning, in terms of selling applications and computer knowledge, it is fairly clear that

From page 24

the typical computer engineer would be unsuited to selling total computer systems.

A total system sale includes not only the hardware, with which the engineer has complete fluency, but also the system software (language processor and operating system) and the application software.

## Right solution

Many engineers are practised in the use of system software, but in the process of selling a complete computer system, particularly to fit a first time user, it is knowledge of the problem to be solved that gives the salesman the credibility to close the order.

Absolute technical knowledge related to a computer system will not in itself secure an order for a production control system, but an intimate knowledge of the manufacturing industry and a real understanding of its problems will.

More often than not the choice of particular computer manufacturer within a total system sale is virtually irrelevant, it is the identification of the real problem and applying the right solution that gets the business.

So where does that leave the engineer who wants to get into selling?

If he has to have any chance of success at all, in terms of first getting a selling job and then reaching a satisfactory level of achievement, he must make the attempt within a product environment where he already has initial product fluency, namely computer hardware.

## Entry

The easiest point of entry is computer peripherals, which are usually divorced from the complications of systems software. One is typically selling to a technical specification in terms of transfer rates, access-time and interfaces - chicken-feed to any competent computer engineer!

He can concentrate all of his efforts on learning the basic skills of selling and building up his confidence.

Selling hardware systems to educated end-users is possibly the next stage to which the ex-computer engineer can advance.

This brings most engineers into new territory, but the nature of the sale is still one of relative performance and specification rather than involvement in the vagaries of the applications problem that has to be solved.

## Getting in

So how does the engineer get his chance to be a salesman?

Well, not typically with a new employer. He should move into a job within the organisation of his present employer.

Moving into a new job function is as big a risk for the employer as it is for the employee and companies are far less likely to take this kind of risk with strangers than existing employees who have already proven themselves in some other job function.

So if you want to be a salesman don't go applying for every selling job in town. Your chances of success are extremely low and the frustration very high.

It is far better to tell your manager and personnel department that you want to get into selling.

Their response may not be immediate, but if you are a valued employee, they will want you to have the opportunity of proving yourself.

Another benefit of making the change with your present employer is that you can always go back into engineering.

Having said all that, the current economic climate is not particularly conducive to the recruitment of trainees, either internally or externally.

At present, many major computer firms have stopped recruiting and, in some cases, trainee salesmen and graduate trainees have been made redundant. However, that doesn't prevent the seeds from being planted now for possible fruition next year.

One final and most important point about those seriously

This industry seems to be notoriously difficult for people without any "hands-on" experience to break into. On these two pages we look at how to get into selling from engineering, and the "wall" that faces would-be programmers.

The article on the left looks at the herby personnel issue of whether sales staff need to know about the products they sell or not.

The author, who is concerned with recruiting people into DP selling, offers some useful advice for the initiate who wishes to make the move into selling and who will have to learn something of the art of making a sale.

On the right GUL-WANT DEOL, one of CW's secretaries since the summer of 1979, describes the steps she took to becoming a programmer.

She has found herself running into some exasperating difficulties. These are her experiences to date . . .

contemplating a move into selling or indeed considering a complete change of job function.

Do try vocational guidance. It is a method of personality testing which can identify with alarming accuracy the presence or absence within any individual of those human characteristics which are essential for success in a particular type of job.

The only organisation I know of which can provide such facilities at a reasonable price is the Vocational Guidance Association, a charitable institute in Upper Harley Street, London.

## Catch-22 for this would-be programmer

AT school I was advised to do a computer studies course because, I was told, the computer industry paid well and held a great future. So I enrolled for City & Guild 747 Computer Programming and Information Processing course at Waltham Forest College.

The course began in September 1978 and was divided into four main subjects: hardware, information processing, related maths and programming. Students were required to complete six projects.

The hardware lectures were mainly about the history of computers, from Abacus to the third generation machines. We studied how they worked and also looked at other machines that are used in the computer industry.

The information processing lectures covered how data is processed and stored, systems flowcharts, decision tables, the kind of people in the industry, and the jobs they do.

## Languages

We learned three computer languages: Casil Plus, Cobol and Basic. The basic programs were run on the college computer, a SWTP 6800 and the programs were stored on minifloppy discs. For the Cobol programs we used an ICL 1904 at the North East London Polytechnic and programs were stored on punched cards.

As for the six projects, we had to document them fully as one would in DP. This meant writing systems specifications, drawing systems flowcharts, program flowcharts, layout of the input and output data and the error listing explaining what went wrong and how it was corrected.

At the end of the course we were told that we had enough grounding to get us into the computer industry. In June 1979 I took the exams, which I passed.

I registered with a computer agency for a job as a trainee programmer or operator. I waited in the hope that they would come up with something, but I never heard from them.

I rang several major computer companies including IBM, ICL, NCR, Honeywell to ask if they had any vacancies for a trainee but they wanted graduates or those with 12 to 18 months' experience.

My hopes of becoming a programmer were slowly diminishing. I wrote to some of the users who advertised in Computer Weekly and the local paper, but it was the same old story . . . I had to have some experience and in order to get experience I had to have experience.

None of the users were interested in City & Guild 747 and some of them did not know what it was, although it is supposed to be widely known.

Perhaps users want to pinch someone else's trained staff. It certainly seemed to be that they weren't enthusiastic about training any themselves.

But if one is not given a chance to get commercial experience then how is one to get any?

Any solutions?

Specialists since 1971 in UK and international computer and technical appointments. We have many other jobs on our files and offer a career counselling service to computer professionals.

An important post with a leading, international oil group, holding responsibility for Management Services in a small 370 environment. The appointment is for one year and a substantial package will be negotiated. Candidates should have proven experience in programming (preferably RPG) and analysis with supervision of projects or a programming group.

501CW

**SOFTWARE ENGINEERS**

**SWITZERLAND**

Permanent employment is offered in Bern, Switzerland for experienced S/E's. Ideally you will be a graduate, experienced in the telecommunications area and be able to programme in ASSEMBLER. An attractive salary and comprehensive benefits package is offered to the right candidates.

256CW

Please write or telephone (24-hour answering) to apply. Quote above Refs.

(379)



international appointments

We are currently working closely with client companies to fill the following positions quickly. They are only some of the interesting positions that we have to fill. If you want advice or assistance with your career development or next move, please call in, telephone or write for prompt attention.

## LECTURERS

West London

£7-£9,500

Candidates for these positions will ideally have some supervisory or teaching experience, together with sound experience of the systems analysis or programming functions in medium-sized environments. More senior candidates should have a knowledge of transaction processing with minis and/or network communications. The positions are with a substantial systems manufacturer, expanding still and confidently building for the future.

102CW

## SENIOR SYSTEMS ANALYST

CITY

Up to £11,000

A large international transportation and distribution group, currently redeveloping several major import/export systems, requires 2 Senior Systems Analysts, having design experience on TP, Real Time, or Database projects. Candidates should have proven abilities and team leadership qualities. These are interesting and challenging positions in a major, developing organisation.

502CW

## ASSEMBLER PROGRAMMERS

EAST BERKS.

£5-£12,000

Not only are the modernised offices of this company based in rural Berkshire attractive, but the opportunity it offers to ASSEMBLER Programmers to participate in the development of a rapidly expanding range of products for offices automation, make these positions doubly appealing. Our client has a strong commitment to the development of network word processing systems internationally. Company benefits vary according to level but include free BUPA.

103CW

## DEVELOPMENT ANALYSTS

MIDDLESEX

£7-£11,000

GRADUATES - Here is the opportunity to capitalise on your existing programming experience by joining the dynamic, but friendly, software development group of a computer manufacturer, leading in application technology for financial and commercial users. If you have 2 years' COBOL experience and wish to expand your design/development (using the latest on-line techniques) capability you should discuss these opportunities with us now.

101CW

## SYSTEMS MANAGER

GHANA

Negotiable remuneration

An important post with a leading, international oil group, holding responsibility for Management Services in a small 370 environment. The appointment is for one year and a substantial package will be negotiated. Candidates should have proven experience in programming (preferably RPG) and analysis with supervision of projects or a programming group.

501CW



Projects and Responsibilities



## Systems Analysts

### Move into Banking

London E15

c.£10,000 + Banking Package

Our client, Morgan Guaranty Trust, is one of the world's leading international corporate banks. As part of a major new programme, it is developing a complete range of on-line banking systems to run on an IBM 4341 operating under DOS VSE.

To assist in this work the bank is currently seeking to recruit a number of experienced systems analysts. Applicants should ideally have experience of on-line systems development in a banking environment, or relevant analytical experience in the commercial sector. The successful applicants will have the advantage of a planned career development programme, offering wide exposure to modern banking techniques.

An extremely attractive benefits package includes low-cost mortgage schemes, annual bonus, non-contributory pension, medical and life insurance plans, interest-free season ticket loan and a subsidised restaurant.

For further details of this excellent opportunity, telephone or write to Kevin McCourt quoting reference 4349.

## Planning/Modelling

Westminster c.£10,500 + BUPA etc.

Our client is a British Government owned company operating exclusively in the public sector overseas for the supply of defence equipment, technical support and the management of major infrastructural projects.

At present the Company's accounting and management information systems are based on computer bureau facilities accessed by means of on-line terminals. To develop these systems and ensure that the changing demands of a rapidly developing business are met, a new position of Systems Designer has been created.

Reporting directly to the General Manager, Planning and Management Services, the Systems Designer will be responsible for the preparation and implementation of a program for systems development. This will involve designing and specifying new systems, liaison with the bureau, supervision of programming staff in the development of new applications and advising management on the use of these systems.

Successful applicants will have several years analysis experience. A knowledge of either CALL AS, or another terminal-based, on-line information management facility would be advantageous.

For details, telephone or write to Kevin McCourt quoting reference number: 4363.

## Retail!

Minis  
+  
Micros!

An exciting new venture in across-the-counter sales calls for a special brand of expertise. You will need an up-to-date knowledge of either minis, micros or wordprocessors and their applications, together with the experience or potential to move into a dynamic sales environment.

Excellent product and sales training will be given.

On target salary packages of c.£9,000 for senior sales people and c.£11,000 for management.

Contact Rebecca Goddard by telephoning or writing NOW!

## 20K + Car + Benefits

Our client, a major international computer manufacturer, seeks to recruit 2 additional sales executives to work in S.W. and S.E. England.

Ideally you will be in your late 20's, early 30's, with a proven track record in either minis or mainframes, and be used to dealing with companies who are not first time users.

In return, the company offers, an on quota package of £20,000, a chance to work under little supervision, and a highly efficient technical support group that enables their salesforce to get on with selling.

For further details telephone or write to Neil Hadfield quoting reference No: 4351.

## Banking Project Leader (Programming)

London £10-12K

Our client is an International Bank based in South East London.

Running on IBM equipment, they are seeking to employ a Project Leader to supervise a programming team.

A thorough knowledge of COBOL and experience of CICS is essential. A good knowledge of telecommunications and experience of user liaison would be a distinct advantage.

Benefits package includes subsidised mortgage and usual banking package. For further details contact Kevin McCourt quoting reference: 4361.

ANDERSON  
JACOBSON LTD

## Sales Executives

● We are a company that manufacture and sell computer terminal equipment and seek to recruit two enthusiastic young sales executives to join our expanding team, based in London and Birmingham.

● If you are under thirty, enjoy a challenge and are sales orientated, we offer a good basic salary, plus commission, company car and expenses. Your earning potential is up to you - the sky is the limit.

● If you are looking for a demanding role, with excellent career prospects, contact Neil Hadfield by telephoning or writing quoting ref: 4342.

## DATA COM Salesmen

£8½K base + car + commission

Unilever Computer Services employs some 700 data processing professionals, and is one of the top three computer services companies in the United Kingdom. It has affiliations with a similar major U.S. company, and as part of the Unilever Group it enjoys the financial backing of an organisation which has an annual turnover of around £10,000,000,000.

DATA COM - one of the specialist divisions of the organisation is currently seeking to recruit sales professionals. In return for a high base salary, company car and an excellent commission scheme, the company expects salesmen to be self-motivated and have the ability to generate new business.

Ideally applicants will have a knowledge of computer output on microfilm but all those who have sales experience and the ability to understand the computing services industry will be considered.

For further details of this opportunity to join one of the major computing services organisations in the U.K. contact Kevin McCourt ref: 4350.

## Systems Programming Manager

London/Surrey £11-12K

Our client is looking for experienced IBM Systems Programmers with over 5 years' experience with knowledge of MVS and TSO to lead a team of 5 programmers in a major new development. For further information, write or telephone Neil Hadfield quoting ref: 4352.

## Programmers

W. London c.£8,000

You should have a minimum of 2 years' COBOL experience on ICL 1900/2900 machines and be interested in moving into development work on a major project. For further details, write or telephone Neil Hadfield quoting ref: 4353.

S.W. England c.£8,500

If you are a Systems Designer/Senior Programmer with solid DLI experience and are looking to join an expanding computer services division, contact Neil Hadfield quoting ref: 4354.

## A Step in the Right Direction

## Systems Analysts

North Middlesex

up to c.£10,000

Our clients, a major British manufacturing company situated in North Middlesex are currently expanding their Data Processing Department centred on the latest ICL mid-range hardware. The company are currently seeking Analysts to become Deputy Team Leaders.

The Company offers:

- The opportunity to progress rapidly to Team Leader
- 5 weeks holiday per annum
- Salaries up to c.£10,000
- The normal benefits associated with a large company

Ideally you should have:

- 5-8 years commercial Data Processing experience preferably in an ICL environment
- A programming background
- Been responsible for design and implementation of a medium size system
- Been educated to degree level
- The ability to communicate well both verbally and in writing

For more information please contact Angela Walsh by either writing or telephoning quoting reference 4248.

## Senior Programmers

North London/Hertfordshire up to £8,250

Our client is the largest British manufacturer of various television and audio products marketed under leading trade names. They have recently taken delivery of the latest ICL 2900 equipment and are looking to expand their programming department.

The company offers:

- Formal training in on-line techniques
- The opportunity to be part of a professional team
- The opportunity to learn structured programming
- 5 weeks holiday per annum
- The responsibility of managing Junior Programmers

Ideally you should have:

- 2-4 years commercial applications programming experience
- A sound knowledge of ICL 1900 or 2900 COBOL
- Be educated to degree level or equivalent
- Be ambitious and self-motivated

For further details please contact Angela Walsh in writing or by telephone quoting reference 4247.

## Projects Manager

S. E. London

c.£12,000

A world leader in the design, manufacture and marketing of bespoke high speed precision machinery, our client is seeking an experienced DP professional to lead and manage the development of a number of interesting applications projects in a technically advanced installation.

From a start date in the early 1980's, the computer has penetrated most areas of the company with particular emphasis on manufacturing and associated financial systems now running on a 4 megabyte IBM 4341 main frame and a large PDP 11/70 installed in one of the divisions. Approximately 50 V.D.U. terminals provide enquiry and interactive processing facilities and there are teleprocessing links between sites.

Candidates aged 30 plus, must have the personality, self motivation and confidence to effectively manage and communicate with all levels of staff and users in a challenging environment. The benefits package includes BUPA, 5 weeks holiday and flexible working hours. Assistance will be given with re-location expenses where appropriate.

For more details of this excellent position, telephone or write to Andrew Cousins quoting ref: 4362.

## Analyst/Programmers

c.£8,500 + 50% travel paid

City

Our client is a successful, expanding, manufacturing organisation. Their current requirements are for people with a minimum of 3 years COBOL experience. They offer the opportunity to gain analysis experience and be responsible for systems from feasibility through to implementation. They offer full training on database and on-line systems with excellent prospects for project leadership. A range of benefits include 50% assistance with daily travelling costs, flexitime, bonus, together with a negotiable salary. Ref: AW 4315

## Consultants

c.£10,000

Our clients, a leading Management Consultancy, are seeking to recruit Data Processing Professionals in work on a variety of commercial projects. You will have a degree or professional qualification and have a minimum of 3-4 years experience with a programming background. Opportunities exist to rapidly progress to managerial level and eventually to partner. Ref: AW 4326

## Swiss Alpine Centre

Exceptional Opportunities for Programmers and Analyst Programmers to live and work in a regional cultural and economic centre. Our client has invested in the latest IBM mainframe, a network of DEC Minis and is developing systems utilising data base and communication techniques. A minimum of 2 years' IBM COBOL is required and experience of DEC minis would be of particular interest for one of the positions. Ref: AC 4360

## Have you considered lecturing?

W. London

to £9,500

A position as a lecturer offers a high degree of job satisfaction and variety with the opportunity to keep abreast of the latest developments in the computer industry. Our client, a major computer manufacturer, seeks people with a data processing background and the ability to communicate with people at all levels. Career prospects are particularly good and offer the opportunity to progress into a number of different roles within this highly successful manufacturer. Ref: AC 4348

## Can we advise you on your career?

Lloyd Chapman Associates are a well known professional recruitment and selection consultancy with a wide spectrum of clients and opportunities at all levels, both in the UK and overseas. All our consultants have several years experience in data processing and are very able to advise you on your future career. We have specialist knowledge of the various opportunities and career progressions available to candidates.

If you are a young Programmer or a more experienced Systems Analyst or Manager seeking the next step we would be happy to advise you in developing your career. We would be able to help you move into a new exciting position with more variety and responsibility coupled with increased job satisfaction.

If you are seeking a new career, save time by filling in this application form and sending it to us now. Alternatively telephone Andrew Cousins (on the number below) for a personal discussion and an appointment.

Personal Please write in ballpoint, using block capitals.

Name \_\_\_\_\_

Address \_\_\_\_\_

Tel.: Home \_\_\_\_\_ Office \_\_\_\_\_

Age \_\_\_\_\_

Preferred Location? \_\_\_\_\_ UK/Abroad (delete)

Please state briefly type of future career you are seeking.

Minimum salary £ \_\_\_\_\_ Preferred salary \_\_\_\_\_

Signed \_\_\_\_\_ Date \_\_\_\_\_

Cut out this section and post to the address below.

Experience \*Delete where applicable.

Machines

IBM 370/4380/others

ICL 1900/2900/others

Honeywell/Univac/

Burroughs\*

PDP

Others (specify)

Languages

Cobol

Assembler

PL/I

Fortran

RPGII

Others (specify)

Operating Systems

DOS

VME/B/K

George (specify)

CICS/OLI

IDMS/MVT/IMS/CMS\*

Others (specify)

Applications

Commercial

Financial

Production Control

Manufacturing

Stock control

Scientific

Software

Database

Message switching

Communications\*/TP\*

Job Titles

Project leader

Systems analyst

Analyst/Programmer

Systems Programmer

Programmer

Consultant

Sales/Customer support

Others (specify)

Lloyd Chapman  
Associates

123, New Bond Street, London W1Y 0HR 01-4081670

Lloyd Chapman  
Associates

123, New Bond Street, London W1Y 0HR 01-4081670



## SYSTEMS AND PROGRAMMING

Systems Programming Manager c. £11,000

Due to a multi-national electronics company, are seeking to recruit a Systems Programming Manager. The candidate should have a minimum of 5 years' experience in the field of systems programming, with a strong background in the use of the IBM 360/370 series. The successful candidate will be responsible for the overall management of the systems programming department, including the recruitment, training and development of staff, and the coordination of the department's activities with other departments within the company.

**Senior Systems Analyst** c. £8,000-£10,500  
There is an excellent opportunity for someone who wishes to join a small but growing company. The company is a multi-national electronics company, and is seeking to recruit a Senior Systems Analyst. The candidate should have a minimum of 5 years' experience in the field of systems analysis, with a strong background in the use of the IBM 360/370 series. The successful candidate will be responsible for the overall management of the systems analysis department, including the recruitment, training and development of staff, and the coordination of the department's activities with other departments within the company.

**IBM Programmer** c. £10,000-£12,000  
Our client is a large commercial organisation, and is seeking to recruit an IBM Programmer. The candidate should have a minimum of 5 years' experience in the field of IBM programming, with a strong background in the use of the IBM 360/370 series. The successful candidate will be responsible for the overall management of the IBM programming department, including the recruitment, training and development of staff, and the coordination of the department's activities with other departments within the company.

**Applications Programmer** c. £8,000-£10,000  
Our client is a large commercial organisation, and is seeking to recruit an Applications Programmer. The candidate should have a minimum of 5 years' experience in the field of applications programming, with a strong background in the use of the IBM 360/370 series. The successful candidate will be responsible for the overall management of the applications programming department, including the recruitment, training and development of staff, and the coordination of the department's activities with other departments within the company.

**RP/II Programmer** c. £8,000-£10,000  
Our client is a large commercial organisation, and is seeking to recruit an RP/II Programmer. The candidate should have a minimum of 5 years' experience in the field of RP/II programming, with a strong background in the use of the IBM 360/370 series. The successful candidate will be responsible for the overall management of the RP/II programming department, including the recruitment, training and development of staff, and the coordination of the department's activities with other departments within the company.

**Asst. Ops. Analyst** c. £5,000-£7,000  
Our client is a large commercial organisation, and is seeking to recruit an Asst. Ops. Analyst. The candidate should have a minimum of 5 years' experience in the field of operations analysis, with a strong background in the use of the IBM 360/370 series. The successful candidate will be responsible for the overall management of the operations analysis department, including the recruitment, training and development of staff, and the coordination of the department's activities with other departments within the company.

**Shift Leader** c. £5,000-£7,000  
Our client is a large commercial organisation, and is seeking to recruit a Shift Leader. The candidate should have a minimum of 5 years' experience in the field of shift leadership, with a strong background in the use of the IBM 360/370 series. The successful candidate will be responsible for the overall management of the shift leadership department, including the recruitment, training and development of staff, and the coordination of the department's activities with other departments within the company.

**Shift Leader** c. £5,000-£7,000  
Our client is a large commercial organisation, and is seeking to recruit a Shift Leader. The candidate should have a minimum of 5 years' experience in the field of shift leadership, with a strong background in the use of the IBM 360/370 series. The successful candidate will be responsible for the overall management of the shift leadership department, including the recruitment, training and development of staff, and the coordination of the department's activities with other departments within the company.

**Shift Leader** c. £5,000-£7,000  
Our client is a large commercial organisation, and is seeking to recruit a Shift Leader. The candidate should have a minimum of 5 years' experience in the field of shift leadership, with a strong background in the use of the IBM 360/370 series. The successful candidate will be responsible for the overall management of the shift leadership department, including the recruitment, training and development of staff, and the coordination of the department's activities with other departments within the company.

**Shift Leader** c. £5,000-£7,000  
Our client is a large commercial organisation, and is seeking to recruit a Shift Leader. The candidate should have a minimum of 5 years' experience in the field of shift leadership, with a strong background in the use of the IBM 360/370 series. The successful candidate will be responsible for the overall management of the shift leadership department, including the recruitment, training and development of staff, and the coordination of the department's activities with other departments within the company.

**Shift Leader** c. £5,000-£7,000  
Our client is a large commercial organisation, and is seeking to recruit a Shift Leader. The candidate should have a minimum of 5 years' experience in the field of shift leadership, with a strong background in the use of the IBM 360/370 series. The successful candidate will be responsible for the overall management of the shift leadership department, including the recruitment, training and development of staff, and the coordination of the department's activities with other departments within the company.

**Shift Leader** c. £5,000-£7,000  
Our client is a large commercial organisation, and is seeking to recruit a Shift Leader. The candidate should have a minimum of 5 years' experience in the field of shift leadership, with a strong background in the use of the IBM 360/370 series. The successful candidate will be responsible for the overall management of the shift leadership department, including the recruitment, training and development of staff, and the coordination of the department's activities with other departments within the company.

**Shift Leader** c. £5,000-£7,000  
Our client is a large commercial organisation, and is seeking to recruit a Shift Leader. The candidate should have a minimum of 5 years' experience in the field of shift leadership, with a strong background in the use of the IBM 360/370 series. The successful candidate will be responsible for the overall management of the shift leadership department, including the recruitment, training and development of staff, and the coordination of the department's activities with other departments within the company.

**Shift Leader** c. £5,000-£7,000  
Our client is a large commercial organisation, and is seeking to recruit a Shift Leader. The candidate should have a minimum of 5 years' experience in the field of shift leadership, with a strong background in the use of the IBM 360/370 series. The successful candidate will be responsible for the overall management of the shift leadership department, including the recruitment, training and development of staff, and the coordination of the department's activities with other departments within the company.

**Shift Leader** c. £5,000-£7,000  
Our client is a large commercial organisation, and is seeking to recruit a Shift Leader. The candidate should have a minimum of 5 years' experience in the field of shift leadership, with a strong background in the use of the IBM 360/370 series. The successful candidate will be responsible for the overall management of the shift leadership department, including the recruitment, training and development of staff, and the coordination of the department's activities with other departments within the company.

**Shift Leader** c. £5,000-£7,000  
Our client is a large commercial organisation, and is seeking to recruit a Shift Leader. The candidate should have a minimum of 5 years' experience in the field of shift leadership, with a strong background in the use of the IBM 360/370 series. The successful candidate will be responsible for the overall management of the shift leadership department, including the recruitment, training and development of staff, and the coordination of the department's activities with other departments within the company.

**Shift Leader** c. £5,000-£7,000  
Our client is a large commercial organisation, and is seeking to recruit a Shift Leader. The candidate should have a minimum of 5 years' experience in the field of shift leadership, with a strong background in the use of the IBM 360/370 series. The successful candidate will be responsible for the overall management of the shift leadership department, including the recruitment, training and development of staff, and the coordination of the department's activities with other departments within the company.

**Shift Leader** c. £5,000-£7,000  
Our client is a large commercial organisation, and is seeking to recruit a Shift Leader. The candidate should have a minimum of 5 years' experience in the field of shift leadership, with a strong background in the use of the IBM 360/370 series. The successful candidate will be responsible for the overall management of the shift leadership department, including the recruitment, training and development of staff, and the coordination of the department's activities with other departments within the company.

**Shift Leader** c. £5,000-£7,000  
Our client is a large commercial organisation, and is seeking to recruit a Shift Leader. The candidate should have a minimum of 5 years' experience in the field of shift leadership, with a strong background in the use of the IBM 360/370 series. The successful candidate will be responsible for the overall management of the shift leadership department, including the recruitment, training and development of staff, and the coordination of the department's activities with other departments within the company.

**Shift Leader** c. £5,000-£7,000  
Our client is a large commercial organisation, and is seeking to recruit a Shift Leader. The candidate should have a minimum of 5 years' experience in the field of shift leadership, with a strong background in the use of the IBM 360/370 series. The successful candidate will be responsible for the overall management of the shift leadership department, including the recruitment, training and development of staff, and the coordination of the department's activities with other departments within the company.

**Shift Leader** c. £5,000-£7,000  
Our client is a large commercial organisation, and is seeking to recruit a Shift Leader. The candidate should have a minimum of 5 years' experience in the field of shift leadership, with a strong background in the use of the IBM 360/370 series. The successful candidate will be responsible for the overall management of the shift leadership department, including the recruitment, training and development of staff, and the coordination of the department's activities with other departments within the company.

## SEE EFFECTIA GRAVIS AT COMPEC '80

OLYMPIA, NOVEMBER 4, 5 and 6  
STAND 7110

Whether you're an EMPLOYER or an EMPLOYEE, come and meet some of our consultants on Stand 7110 and see how we can help YOU.

AS Don't miss out on our free champagne draw



**EFFECTIA GRAVIS**  
COMPUTER PERSONNEL CONSULTANTS  
NATIONAL HOUSE, 66 WARDOUR STREET, LONDON, W1V 3HP

01-439 6481  
75-hour answering service

License No. SE(A)122

## CONTRACT SPOT

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

ANALYST/PROGRAMMERS

Complete the coupon and return to Effectia Gravis, National House, 66 Wardour Street, London, W1V 3HP, for your next PERMANENT or CONTRACT job.

(GUIDE CAPITALS PLEASE)

Name (in full)

Address (Permanent)

Telephone (Home)

Telephone (Office)

Type of Transport

Date of Birth

Current Position

Salary / Rate

Position Required

Salary / Rate

Notice Required / Date Available (if date)

Areas Preferred First Choice

Second Choice

Experience to date: (Last Position First)

Company Name From To

and Location Mile Year Mile Year Duties and experience

Date Signature

Ref. No. DATE

(1174) CW/20/10/80

# Why don't more women get into DP?

by Pamela Poe

WHY is it that in an industry which, by virtue of its youth, is without many traditional prejudices there are relatively few women, apart from secretaries and punch girls?

In an attempt to unravel this mystery, PAMELA POE of Datakil reports on surveys done in her firm on this question. She suggests that while in theory there are no barriers to women being successful at all levels, perhaps there is a lack of career vocation at school and college levels.

institutional barriers which block them from advancement to the top.

The British Computer Society provided us with information that show there is a myriad of computer studies courses, degrees, diplomas, examinations and professional bodies' qualifications available to all regardless of their sex.

## Counselled

We wonder why our female employees - and probably countless others - hadn't been counselled into DP. Having said that, software development, we believe, is the fruit of a disciplined mind, trained in problem identification. As in other areas of industry, women need to retain an awareness of their sex. In the words of Richard Gurney, Datakil's manager of consultancy services: "In consultancy and project management, for the successful women, there are no difficulties in recruitment but the biggest single limiting factor is women's preparedness to accept mobility in a consultancy role; to succeed, a woman has to be better in a given environment than a man would be."

What is Datakil's advice to would-be female software developers? To take a degree and be available for "milk round" interviews? The current recession has tempered the option. To embark upon the computer education route? Our women employees certainly haven't pursued that course. To take a degree in anything and register with an employment agency, make direct application or respond to a recruitment ad?

Research from our firm could not point to any effective approach. We appealed to the experts, asking Reading and Central Berkshire Careers Office. It said: "The computer industry is interested in graduates who should have a numerate degree but not necessarily in computer science. We advise that a degree in maths or electronics engineering is preferable because the industry is aware that there could be a glut of computer science graduates. A numerate degree offers better prospects in management and operational research."

## Recruited

We found that 11 were recruited from the "milk round", having joined Datakil straight from university, five had transferred from ICL, six had been recruited through an employment agency, six had answered a recruitment ad and six had either made a direct application or had written an inquiry letter resulting in direct application.

Of the graduates, 20 had taken degrees in mathematics while other degrees were as diverse as sociology and bio-chemistry.

We think that traditional approaches to career counselling have, in the past, contributed to women not even considering a career in DP.

In a separate poll we talked to a further 21 women and determined that 14 had degrees - 13 in disciplines other than computer science.

Of the remaining seven, two had attended secretarial college, two had gone to technical colleges, one had a grammar school education.

Some 16 of these women were, as tradition would indicate, reticent to divulge their ages. On the other hand, they had no compunction talking about sexual discrimination.

All but one said they had not encountered job or promotion-related sexual discrimination in Datakil. Some had entered ICL as secretaries and, according to them, had had to use their manual skills to break into sales and subsequently "responsible positions".

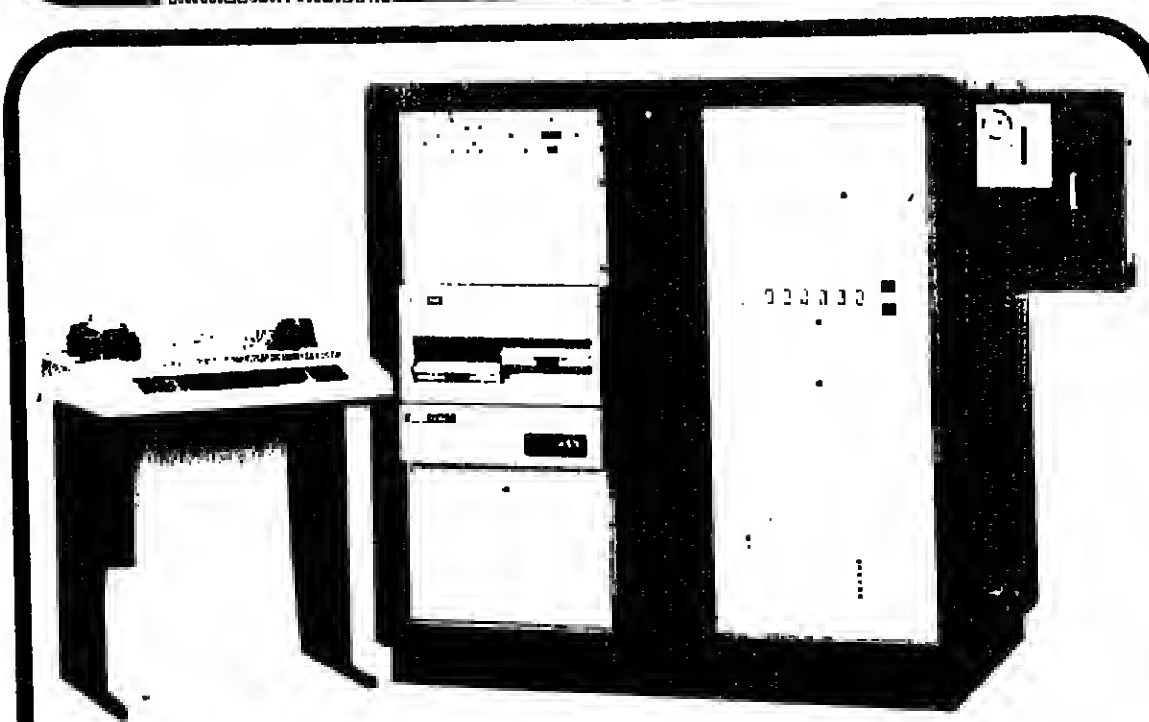
## Breaking out

Some said their advice to women aspiring to break out of "traditionally" female positions was to enter one and then to "prove oneself". This is reminiscent of what one man said in the early Seventies: "Well, gentlemen, in my opinion, data processing is a plot to infuse industry with women."

Datakil agrees with a paper presented by California University, Los Angeles, at the 1978 National Computer Conference. It said: "Women's pursuit of careers in the computer industry is consistent with our national commitment to equal opportunity and with our national need to utilise all available talent in support of scientific research and industrial efforts."

"Computer science education and immediate employment on the first steps of the career ladder are readily available for women but after these initial steps women still face cultural, educational and

## ARL SYSTEMS PEOPLE



Systems Analysts & Programmers

Up to £10000p.a.

ARL are world leaders in high technology analysers for research and production control. Coupled with our lead in analytical techniques we are very advanced in the application of Real Time computer systems for analyser instrument control, result processing and Management Information systems. To support our high level of success in selling special systems worldwide and contribute to the development of a new company product we now require four extra people to expand our active systems Group. This group is supported in its product development activities by a very high level of in-house equipment.

If you can demonstrate some of the following:

- Proven system analysis and design experience
- Experience in project leading (for senior posts)
- Contribution to a successful project team.
- Ability to work with customers as a team.
- Experience of RSX or RT operating systems on DEC PDP-11 computers.
- Knowledge of MACRO-11, FORTRAN or BASIC.
- A background in scientific or process control applications using real time systems.
- A desire to work in a small team in a small progressive company.
- Willingness to occasionally travel to other branches of a worldwide organisation.

Then contact:

Mr Graham Gilmore  
Systems Manager

Applied Research Laboratories Ltd.  
Wingate Road  
LUTON  
Bedfordshire

Telephone Luton 53474







## GREAT OPPORTUNITY

For a career-minded salesperson to realise their full potential. For the right person we offer:

- a ground floor opportunity where you can make a substantial contribution
- a dynamic growing company
- the scope to develop our marketing and selling activities
- a product of the 80s — minicomputers and commercial packages
- location in South-East England (Croydon based)
- Unlimited potential earnings plus an executive car

## SALES MANAGER c.£15,000

We are a company providing the full range of computer services mainly in London and South-East England. Our aim has always been to provide a professional service of high quality in all areas of activity.

We have recently started selling Data General computers, with both general and industry specific packages. Our packages are written in COBOL and we are able to offer systems tailored precisely to our clients' needs.

We are based in an area with enormous untapped market potential for our products.

We have our own Data General Computer in our Central Croydon offices and a small high calibre pre and post-sales support team.

We are looking for an entrepreneurial minded salesperson who will make a major contribution to the development of our marketing and selling activities and the growth of our company.

You must be fully aware of the commercial interactive minicomputer market and have a good appreciation of commercial systems.

The remuneration includes a substantial basic salary and an initial guarantee. On target earnings will be £15,000 p.a. The package is geared to reward top performers with earnings among the highest in the industry.

For further information please contact BRIAN BATH-GATE as below or outside office hours on Oxted 4571.

(1337)

**FORCE 8**  
Computer services

8 Mint Walk  
Croydon  
01-680 3761

## RN-SSK DIESEL-ELECTRIC SUBMARINE WEAPON SYSTEM NEW PROJECT : NEW OPPORTUNITIES SOFTWARE DESIGN ENGINEERS

The advent of a new class of submarine for the Royal Navy brings with it fresh opportunities for a system approach to the proposed weapon fit. As a significant part of a multi-million pound contract Vickers Shipbuilding Group Ltd. Weapons Department have been designated CO-ORDINATION AND SYSTEM DESIGN AUTHORITY with responsibility for overall system design development and performance amongst other tasks.

As part of the newly formed team SOFTWARE ENGINEERS are required with particular responsibilities in a REAL TIME MICROPROCESSOR based system for:

1. Specification, design and implementation of software modules for submarine weapon guidance and target analysis systems using high and low level languages.
2. Analysis of Mathematical and Statistical methods particularly those concerned with target tracking (e.g. digital filtering technique).
3. Assessment of overall system considerations concerned with the procurement of a total ship weapon system.

Experience of submarine operations would be desirable.  
**QUALIFICATIONS AND EXPERIENCE**  
Honour degree or equivalent in maths or applied science plus at least 3 years experience of Software design for Military and Industrial real-time systems.  
The positions are open to both men and women.  
Please write with details of age, qualifications and experience to:

Mr J. Richardson, Personnel Officer,  
Vickers Shipbuilding Group Limited,  
Barrow Shipbuilding Works, PO Box No. 6,  
Barrow-in-Furness, Cumbria, LA13 1AB

**Vickers Shipbuilding Group Limited**  
A member company of British Shipbuilders

(214)

## William Key SALES

Target earnings  
over £15,000 p.a.  
— no upper limit

CAPEX — a leading company in the software product market. The company develop end market products to optimise and increase OS end DOS programming and systems performance. The company achieved a growth rate of over 50% annually in recent years.

Applicants should have:

- a good appreciation of the operating end software environment of large IBM mainframes, ideally OS.
- worked as an Applications Programmer, Systems Engineer or Systems Analysts in an IBM environment.
- worked for at least one year in a sales or sales support capacity.

The company require a salesman to sell and manage an accounts area: they offer a basic salary plus car arrangement plus no limit sales commission scheme. Product training is given in Europe or USA and technical back-up is established in the UK and Europe.

For further information please write or telephone Jenny Dalrymple-Hay on 01-493 2947 (office hours) or Beeconsfield (04946) 4579 (evenings and weekends) quoting reference No. CW9835.

**WILLIAM KEY & PARTNERS, 4 HALF MOON STREET, LONDON W1**

## MANAGEMENT & EXECUTIVE SELECTION

telephone 01-637 9611

## NOTICE BOARD

### Selling the Big Names ESSEX

Product & Marketing  
Managers  
to £12K Basic + Commission  
+ Car

If you're already involved in selling major manufacturers' equipment and would like to broaden your horizon, you should be talking to our client. They are a well-known Hardware Systems House with a wide range of quality mini and micro products, looking for experienced sales support engineers to help the sales team cope with the ever-increasing business.

Production Manager  
to £12K + Car

Required to control all Production and Shipping Activities within the Company.  
Further details on request.  
Call Ruth Herman or Peter Gorton on 01-637 9611. (1336)

### GENEVA ↔ LONDON

Unique opportunity for an analyst/programmer to get involved with supporting and possibly marketing a new banking system based in Geneva and London. Experience of the Burroughs 2900 an advantage, however, you will need a sound knowledge of banking systems and a good grasp of commercial French.

Remuneration up to  
£12k + Car and normal bank  
fringe benefits

For more information contact Diane Williamson on 01-637 9611. (1335)

### Something Special in the City

to £10K basic  
+ commission, car + benefits

Immediate and accurate information is the life-blood of the City. Our client, who is a major name in the financial world, provides an on-line data and administration service for stockbrokers, bankers, etc., and are acknowledged as market leaders. They are looking for a city sales executive with bureau and software experience to talk to existing customers and negotiate new business. It's an exciting opportunity to sell unusual and highly successful products in London's business centre.

If you're looking for something special in the City contact Ruth Herman on 01-637 9611. (1336)

### IBM EXPERIENCED COMPUTER ENGINEERS

Are required immediately in S.W. England and S. Wales for our client's multiple IBM 370 installations.

A large organisation with an impressive track record, our client offers a secure and progressive career with continued IBM systems training.

### DEC or IBM PROJECT/ TECH. SUPPORT ENGS.

Are also required by this company in the Northern Home Counties. Candidates experienced on either IBM mainframes or DEC minicomputers will find these roles an interesting career progression. Naturally, salaries will reflect the importance of all these positions, and benefits will include a company car.

A generous relocation package is also available where appropriate.  
Contact: Howard Wynne, Engineering Division. (1336)

Suite 201/6 Albany House 324 Regent Street London W1R 5AA 01-637 9611

MANAGEMENT & EXECUTIVE SELECTION

35



# COMPUTER WEEKLY TOPS 94,000

The increase reflects a higher demand for the paper created by the growth in the computer market — a growth we continue to share.

COMPUTER WEEKLY'S circulation has topped 94,000 making it the highest of any UK computer journal.

Computer Weekly has reached a steadily increasing circulation since it was launched as the first of its kind in this country in 1966. Then the circulation was just 10,000.

The new figure will be revealed in returns to be published by the Audit Bureau of Circulations (ABC) for the January-June period this year.

HIGHEST CIRCULATION OF ANY UK COMPUTER JOURNAL

## 01-404.0152

### COMPUTER SEARCH LIMITED

Norwich House, 13 Southampton Place, London WC1

## Computer Weekly is moving . . .

From Monday, November 10, 1980, Computer Weekly's editorial, advertising and production offices will move from Dorset House, Stamford Street, to:

**Quadrant House**  
The Quadrant  
Sutton, Surrey SM2 5AS  
Tel: 01-661 3500  
Telex: 892084 BISPRS G

### SYSTEMS PROG.

SURREY £11,000

3 1/4 yrs. DOS/VS experience under POWER. Knowledge of CICS/DLI an asset. Having recently installed VSE on a 4341, our clients require a S/P to take full responsibility for the system.

(TH1117)

### CHIEF PROG.

CITY c£11,000

5 yrs. experience, including ability to direct and co-ordinate team of approx. 16 programmers. Preferably with knowledge of IBM COBOL under OS and Database techniques.

(TH1054)

### SOFTWARE

IBM/ESSEX to £10,000

ASSEMBLER programmers, minimum 2 years' experience to work on a variety of TP Software developments including TP monitor, Distributed Data Processing. Knowledge of BTAM and/or VATM a distinct advantage.

(TH1012)

### CONTRACTS

370/DOS ..... PL/1 & COBOL  
370/OS ..... PL/1 & COBOL  
2960 ..... VME/B or K COBOL  
PDP 11/34 ..... RSTS/E BASIC

### SOFTWARE PROGRAMMERS

at all levels

### SNR BUSINESS ANALYST

CITY to £11,500

Able to identify internal and external changes likely to affect the systems strategy, preparing revisions of the strategy and carrying out project tasks and supervising and developing staff. 2-3 yrs. exp. in managing small project groups, 4-5 yrs. business exp. 2-3 yrs. S/A exp. pref. including network design.

(TH1149)

### SNR. PROG.

HERTS. c£8,000

3 yrs. + DOS COBOL programming experience. Good knowledge of CICS (commercial level) database exp. an advantage. To develop existing system/assist with software and advise/train junior staff.

(WA1185)

## datascene

### PROGRAMMERS & ANALYSTS

SURREY, ICL 2800 C000L to £8000

Our client is a well-established insurance company, situated within easy reach of Surrey, Sussex and London, who seek to extend their D.P. staff in the New Year.

They require COBOL programmers with at least one year's experience and analysts with not less than two years. In all cases a knowledge of the 2900 range is expected. In return they offer a good pension scheme, a mortgage and a relocation package.

0.4654

### PROJECT LEADER

SURREY to £12000

Our client is the computer division of a well-known group of companies who have recently expanded their processing power very significantly to cater for a heavy systems development plan. The company require an experienced PROJECT LEADER with up-to-date knowledge of PAYROLL systems to complement their friendly systems development department. A minimum of six years' experience at a senior level working in COBOL will be needed by the successful applicant.

Rel. R. 4770

### RPGII PROGRAMMERS & ANALYSTS

NORTH LONDON, IBM SYSTEMS 34 to £8500

Good opportunity for experienced programmers, Analysts/Programmers and Analysts to join this rapidly expanding North London construction company. Applicants can expect a variety of applications whilst being served by a network of IBM system 34 Computers. Career opportunities within this group are excellent. Company benefits include s. bonus, non-contributory pension scheme, four weeks' holiday.

Rel. M.4437

### BASIC + /BASIC + 2

VARIOUS LOCATIONS to £8000

We are continuously looking for new vacancies for programmers and analysts/programmers in BASIC, BASIC+, BASIC + 2, or AIMS Experience ranging from JUNIOR to SENIOR LEVELS could open opportunities in BANKING, INSURANCE, LEISURE or SOFTWARE HOUSES, located in ESSEX, THE CITY, BERTS, SAUDI ARABIA and HANTS. Experience with DEC, PDP or SYSTIME equipment would be particularly relevant especially if combined with a FINANCIAL or ENGINEERING background.

Rel. R GEN

### RPG II PROGRAMMERS

LONDON CITY, IBM SYS. 32, 34, 38 to £9000

Well established software house specialising in Insurance and banking systems are recruiting RPG II Programmers. You should have at least 10 months' experience, preferably with IBM In-house and gained ideally within a financial environment. Client contact is expected and applicants will be dealing with management at all levels. These positions offer excellent scope for capable programmers who wish to enhance their careers by utilising the latest IBM software and in-house developed database systems.

M.4724

### PROGRAMMERS

LEICESTER, IBM COSOL to £7000

The computer services division of a very well-known and reputable company are looking for programmers or analyst programmers to complete their establishment.

The installation uses both batched and on-line work to sister sites in the Midlands. Most development work is on-line. A minimum of four years' commercial experience on IBM machinery is expected which will, hopefully, have included program specification writing. In addition to the salary, the company offers a pension fund and restaurant.

0.4742

### RPG II ANALYST PROGRAMMERS

LONDON CITY, IBM SYS. 32, 34, 38 to £10,000

An excellent opportunity has arisen for experienced Analyst Programmers to progress into consultancy. Ideally you will have at least three years' IBM RPG II experience, one of which should involve systems work. Applications will involve around banking and insurance projects and will include database, communications, and financial planning and modelling. Applicants must be of smart appearance and have been educated to A level standard. An excellent benefit package is offered and futuristically will include a car.

M.4726

### SYSTEMS PROGRAMMERS

SOUTH COAST, IBM 3031 to £8000

A very reputable and long established insurance company whose data processing installation is situated on the South Coast of England need a systems programmer. Candidates should have a deep knowledge of data processing and have at least two years' experience of systems programming on IBM machinery using Assembler language. In addition to the salary, the company offers all the benefits one associates with a company of this standing.

0.4497

### JUNIOR ANALYST

B.W. ESSEX to £7600

An excellent opportunity has arisen for a very good programmer or analyst/programmer to make the transition into SYSTEMS ANALYSIS. Modern UNIVAC equipment is utilised in the department and a large data communications network has been established. A variety of batch and on-line systems are in operation and development is still taking place. In addition to the salary, a bonus of approx. 5% is paid.

Rel. R.4675

Datascene International Limited,  
Sceptre House,  
169-173 Regent Street,  
London W1R 7FB. Telex: 25851.

## datascene

## 01-439 7871

24 hour answer phone.

## Computer Professional Recruitment Consultancy

### SALES MANAGER — MIDLANDS — c £21,000

To join a dynamic market leader with control of five salesmen. You must have sold Mini/Mainframe sales experience in the commercial applications marketplace.

### SALES MANAGER — LEEDS — c £14,000

You will have sold On-line commercial systems and have had some experience of Databases. Growing company, excellent career prospects, wide range of applications.

### SUPPORT CONSULTANTS — LONDON — £10,000+

To work in a Pre Sales Support capacity for this major European Mini manufacturer. The company is expanding at a dramatic rate and is undergoing an exciting development phase.

### RECRUITMENT CONSULTANTS — LEEDS / MIDLANDS / LONDON — c £16,000

Ten years plus experience in the industry? Experience in the recruitment of Computer Personnel? A detailed background in Senior Systems or Sales within the Computer Industry? We would be interested in talking to you about a career in Recruitment Consultancy.

### TECHNICAL SUPPORT CONSULTANT — MANCHESTER — / £9,500 plus car

A leading computer manufacturer is seeking an individual with commercial applications experience in a Database environment. This is an outstanding opportunity with early promotion to management.

### POST SALES SUPPORT CONSULTANTS — OVERSEAS — £ HIGH NEGOTIABLE

Two positions, one in Brussels the other in Bahrain. For Brussels you must have communications experience and for the position in Bahrain Basic + programming skills.

For details on the above positions phone Leeds 0532 774040 quoting R17 or write to: CPR Consultants Ltd, Suite 28, Concourse House, 11, 432 Dawsbury Road, Leeds LS11 7QF. Manchester Office: 12 Mosley Street, Manchester M2 3AQ 061-228 1364.

## ENGINEERS WITH MAGNUSON

Magnuson is a fast growing, dynamic young company which manufactures the IBM plug compatible computer series designed by Carl Amdehl and known as the M80. The M80 series is fully compatible with IBM's mid-range of 360, 370 and 4300 computers and supports all IBM's current operating systems.

The M80 has been widely acclaimed as an exceptionally clever application of 'Off the shelf' technology to produce a highly advanced but simply constructed series of computers. The M80 can justly claim to be unmatched in reliability, flexibility and the ease with which its models can be upgraded.

If you think you have the right practical experience of working with IBM or plug compatible CPUs and IBM peripheral Hardware and would like to join our Engineering team supporting this advanced machine, then we would like to hear from you. Our vacancies exist in the Home Counties, the North-East and the North-West.

We offer a competitive salary with excellent benefits including company car, pension, BUPA etc.

If you think MAGNUSON is the right move for you.

Call or write to:  
**Lorna Robertson**  
Personnel Manager  
Cedar Court  
11 Falmley  
Henley-on-Thames  
Oxfordshire  
Tel. (04912) 78159

## MAGNUSON

(13401)



# Services business set to overtake manufacturing in 80s

THE computing services business employs over 25,000 people at the present time, but it is expanding rapidly. Computing services are expected to overtake computer manufacturing, both in revenue, and number of people employed, sometime during the 1980s and they offer an excellent career to young graduates in a young and rapidly expanding industry.

Computing services consist of those businesses which operate in between the computer manufacturers and the ultimate computer users. For example, computer service bureaux actually process data for customers who do not own their own computers, while software houses provide programming and systems analysis for customers who need these services either on a specialist basis or to supplement their own limited resources.

## Advice

But there is a whole range of computer service companies extending from data preparation bureaux at one end to high-level computer consultancies at the other.

Computer consultancies offer professional advice and assistance to their clients in the areas of management information, organisation studies, corporate planning, market studies, hardware and software selection, installation planning, systems audit and the use of advanced

specialist computer techniques.

Systems and software houses provide software of two basic kinds. Systems software is concerned with the running of the computer themselves, including such items as the operating systems, the compilers, sort routines and standard utilities. Applications software, on the other hand, actually does the customer's work.

The software house may write programs in either category to the individual requirements of its clients, and this is referred to as custom-built software. Alternatively, the software may be written in a standard form to satisfy a large number of different clients, and this is referred to as package software or program products.

Systems houses are increasingly involved in supplying hardware, bought wholesale from manufacturers, as well as software to meet clients' requirements, and there is also a large area of business concerned with interfacing between the products of different manufacturers or between the telecommunications links and different computers.

Computer bureaux operate their own computers and sell data processing to a wide variety of different organisations. The bureaux may sell custom-built systems which they have written especially for each client and they then operate these on a routine basis.

Alternatively, they may offer package services where they operate the same program for a variety of different clients on a routine basis. Lastly, the bureaux may sell raw computer time to those clients who will be responsible for their own programming or simply need to supplement their own peak-load requirements if they are computer owners.

Where bureaux receive their input from a client by some form of delivery service, and where the printed output is distributed by the same type of service, this is known as local batch processing.

## Time sharing

A second type of service is known as remote job entry, where the input and the output are distributed by telephone lines which may be either private leased lines or the public switched network.

Lastly, bureaux may offer a time sharing service or interactive service where the output is required to arrive at the client's terminal almost immediately after the input has been keyed in so that further input may be modified interactively on the basis of the output. With the increasing tempo of modern life and the demands for faster response from modern business, it is not surprising that the interactive services are the fastest growing of all computing services.

In addition to these three

main categories of employer in the computer service industry, there are a number of important but smaller categories. One of these is the computer training or education companies, which are small in number at present but are growing exceedingly fast in view of the shortage of computer staff at a time of high unemployment. Other companies specialise in the recruitment of computer personnel, and although these are not large employers of graduates in total numbers, they have a high profile in the marketplace because of the large amount of advertising they undertake.

Other specialist companies include data preparation and specialist data input companies together with specialist data output companies such as Computer Output on Microfilm services. Independent maintenance organisations are also included in the computer service industry, and all these types of companies come together in one trade association, the Computing Services Association, which represents over 80% of the total computer services industry in the UK.

The computer service industry is characterised by the opportunity for rapid personal progress which derives primarily from its high growth as well as its lack of traditional structures. It has a wide variety of activities because of the dynamic nature of its market and the developing information



by Doug Eyeions

Dr Doug Eyeions is the director-general of the Computing Services Association, the trade body for firms that provide data processing, programming and consulting services to other companies. A physicist by training, he was formerly technical director of Datasolve.

technology with its vast scope of applications.

An important aspect of careers in computing services is that opportunities do not depend solely on progression through conventional managerial grades, as in many of the traditional trades. Comparatively young technical staff can carry status equal to that of their line management equivalents and can be even more highly rewarded.

Women find true equality of opportunity, rather than theoretical equality in an industry where ability and initiative count for more than age or sex.

## Job rotation

In nearly all service companies people are encouraged to move from one kind of project to another. This job rotation provides them with a wide range of job experience which they would not obtain in user installations and the experienced graduate in a computer service company, or computer professional as he is known, will have a wide assortment of commercial and technical case histories to enlarge his experience upon a few years.

It must not be supposed that computing services implies just "programming." Although this

is a vital part of the skills, only one phase of several possible career paths in the industry. The central technical skill is certainly programming, but it must be emphasised that the computing services organisation is a business and has many different functions in common with any business.

Overall, career opportunities exist in the following areas: Marketing. There are excellent opportunities for graduates in this field, where the end-user customer needs is carried where product lines are conceived and product planning, management and promotion takes place.

Selling. Opportunities also exist in this area, which should not be dismissed by the career-seeking graduate. Selling is the most important part of business activity and some of the highest paid and most successful people in the computing business began their careers as salesmen, working their way through sales management to the very top of their companies.

Selling may include technical selling, for which a degree professional qualification is almost essential, or the sale of computer systems where the graduate's education should provide him with a complete

• Turn to page 51

# BE A WINNER!

Examine your Career to date and ask yourself a few questions.

What encouragement do you get to go to the top?

Are you really falling behind?

Where will you be two years from now?

Have you got a permanent and progressive Career?

Do you really have job security?

When will you become a shareholder in your company?

ARE YOU A PROGRAMMER or SENIOR PROGRAMMER?

DO YOU HAVE IBM OS or DOS EXPERIENCE?

EARN UP TO £10,000 in the UK.

DO YOU HAVE ICL, VME/B COBOL EXPERIENCE?

EARN UP TO £10,000 in the UK.

EARN UP TO £18,000 in EUROPE.

Are you looking for:  
**Motivation**  
**Attractive Salary**  
**Responsibility**  
**Career progression & job security**  
**Overseas assignments**  
**Large company benefits**

# AIM HIGHER-JOIN MARCOL

For further information please contact:

Penny Bailey

Marcol Computer Services Ltd

60 Queen's Gardens

London W2

Tel: 01-402 9355 (24 hour service)



# MARCOL

Total Capability from the Marcol Group.

## CARBORUNDUM DATA SYSTEMS LTD.

Carborundum Data Systems Ltd. is the European computing centre for the Carborundum Group of Companies. The purpose-built centre is located in a rural setting on the edge of a developing Science Park at Risley, nr. Warrington and is within easy reach of the M6 and M62 motorways.

Our present hardware consists of an IBM 3031 with T.P. links to ten European locations.

Due to continuing developments within Europe, applications are invited for the following positions:

## SENIOR ANALYST/PROGRAMMER

The person appointed will report to the Project Manager, and will be responsible for detailed analysis, programming, and implementation of assigned projects for Europe.

A minimum of four years' Cobol programming experience is required, preferably on IBM equipment. Knowledge of CICS and OS/JCL would be a distinct advantage.

## SYSTEMS PROGRAMMER

To maintain and support a wide variety of packages including APL and DL1. Knowledge of Assembler is essential and preference will be given to applicants with a knowledge of Cobol/DL1 or APL.

Carborundum offers excellent salaries, commensurate with experience and the benefits are those expected of a major company and include 5 weeks' holiday, a 4 1/2-day week and BUPA.



GEORGINA CORBETT  
 PERSONNEL ADMINISTRATOR  
 CARBORUNDUM DATA  
 SYSTEMS LIMITED  
 KELVIN CLOSE  
 BIRCHWOOD SCIENCE PARK  
 RISLEY, WARRINGTON  
 WA3 7PB  
 TEL: 0925 819640

## IMMEDIATE CONTRACTS FOR PROGRAMMERS

PRIME 750 COBOL	Middle East	£20,000 p.a. + expenses
IBM SYS. 34 RPGII	Croydon	Neg.
DEC PDP DIBOL	Croydon	Neg.
IBM 370 COBOL-OLI-VASM	London	Neg.

These are just a few of our current vacancies.



For further details please contact:  
 NIC POLAND  
 TYLIN PEOPLE  
 A division of Tylin Management Systems Limited  
 Lion House, High Street, Croydon, CR9 3NH  
 01-890 2323  
 A member of the TATE & LYLE GROUP  
 Members of:  
 Computing  
 Services  
 Association



# No escape from the recession for the computer industry

A CALL from the editorial department of Computer Weekly — would I write 1,500 words on sales recruitment within the computer industry.

Something of an amorphous task I thought to myself, but as I began to make a few notes on some of the events of the past year I began to realise that there have been quite a few changes in the sales arena, not the least of which is a significant reduction in the number of selling jobs available.

With over two million unemployed and all the ensuing publicity, even the most ardent optimist must accept that despite its growth and technological glamour, the computer industry is no more able to avoid the effects of economic recession than any other business.

From the salesman's point of view in particular, his ability to stay or get into a job is a function not only of his relative personal success but also whether his employer sees declining company revenue to be a justification for weeding out non-performers, freezing all recruitment, expanding the sales force or getting rid of it altogether. (In 1973 one major mainframe manufacturer sacked its entire sales operation overnight!)

The events of the past few months do not augur well for certain categories of personnel. One major manufacturer recently made over 100 graduate trainees redundant before they actually started work, while another sacked over 60 sales and sales support personnel. And its job ads in the

computer press have dwindled noticeably.

From my own company's point of view, October/November is traditionally one of the busiest times of the year with a significant portfolio of new assignments both committed and in the offing. While we are still reasonably busy, the number of forthcoming campaigns is significantly less than at the same time last year.

Another pointer to both a reduced availability of selling jobs and perhaps the increased stringency of sales management is a significantly increased response rate to advertisements.

## Pressure

Certainly it is not a good time for a high level trainee, be they graduates new to industry, technicians wanting to get into selling, experienced salesmen attempting to enter the computer industry or even experienced computer industry salesmen wanting to change product families, say, services to hardware systems or supplies to peripherals.

Sales management is being pressured into producing quick results, and for the first time in years a significant number of companies are below sales target. They, therefore, want salesmen who can achieve results in the shortest possible time. The typical 12/18 months learning curve of a systems sales-trainee, or even the shorter unproductive period of anything less than a fully experienced

salesman, is untenable to most sales managers in the currently depressed market.

There can be no doubt that the sales situation has become increasingly difficult for some companies over the past year, but obviously not all. I was speaking to a branch manager from a hardware manufacturer the other day and he said that business was reasonably good and his branch was achieving its numbers. However, they were having to put in twice the normal effort to get there and for the less able salesman the pressure was becoming too much.

The effect of economic recession on potential buyers could be said to force them into one of two camps: those who say that the effect of the depressed market is to starve them of finance that would otherwise be available for funding the introduction of computer systems or equipment (i.e. they can't afford the money) and those who believe that the increased competition of a reduced marketplace has increased the need for efficiency in production and the availability of rapid and meaningful management information (i.e. they can't afford not to introduce or extend the use of computers).

Similarly, there are those computer companies which put up the shutters or succumb to the traditional US weakness of over-reaction and immediately freeze all recruitment of salesmen (as well as other personnel of all kinds), or even start laying off support personnel and trainees. Conversely,

there are those companies which have the wisdom to see beyond the insularity of the annual budget syndrome and refuse to allow short-term setbacks to affect long-term strategy. If they have a plan to increase their market share, which in turn involves an increase in the size of their sales operation, they get on with it regardless. They have sufficient confidence in their own capability and the future of the industry to avoid punitive actions now which might cost them dearly in the future.

There are also companies and sales managers which see market recession as a time for really sorting out the sales team. They don't batten the hatches and luck in all the ineffective salesmen with the real performers; neither do they carry on as if nothing had happened. They make absolutely

salesmen stick with "the devil they know" and weathering out the economic storm in a friendly port before venturing into the uncertain waters of a new employer and perhaps an unfamiliar marketplace.

Perhaps it is merely coincidence, but in the last few months there seems to have been a much higher proportion of sales managers and senior executives seeking new jobs than I have been accustomed to in the past. There also appears to be a greater number of salesmen who have left manufacturing to join the turnkey/OEM systems houses within the last few years and now wish to return to the fold.

In the first case one can only assume that the present market situation is putting more pressure on management in getting the required

number of the job market better than the higher one's wages and the "low" which means there are always plenty of job opportunities available — only, unfortunately, the number of opportunities for managers is always less than the number of people seeking them. Frequently, any manager who gets into employment right now must consider the best moving one step back to move steps forward.

## Megalomania

For many sales managers, the only prospect of immediate employment is to take a sales job within a company where prospects of advancing back into management are a reality.

For many sales managers, the situation can bring about the realisation that they have been "ripped-off" by their company, that the reduced pressure of greater freedom of territory is the best thing that ever happened to them! However, that may be a tolerable situation for someone run-of-the-mill megalomaniac.

The services sector does well in periods of economic recession relative to the price of hardware supplies. The probably because the "buyers' market" implies less competition than an on-site solution will capital investment up-front, giving greater flexibility for scaling or increasing usage at a price. It does not involve the full total capacity from day one, but rather pay for what is needed more.

Software houses also do well in a depressed market, they too offer the opportunity of the end-user to reduce the cost of extra personnel and equipment, or perhaps at a higher rate, for only the essential systems and programming work.

## Security

The project and technical applications oriented computer houses are not typically as fortunate as their commercial application counterparts when it comes to economic recession. The end-user for the end-user to cut when they are about cost savings are projects, particularly research and design jobs.

The point I am trying to make is that salesmen who may be thinking of changing their jobs, are in the sectors of the industry where there are more job opportunities and more security than others, depending on the nature of the economic climate. Clearly, seeking re-employment is not made easier by a depressed market, but nonetheless, salesmen must try and avoid being the first to look at oneself, or perhaps seek the advice of an independent career advisor specialising in the type of sales, and decide upon the type of job, company, product, etc. which makes sense within the context of individual career development.

Having made these observations on the marketplace as I see it, I am sure there are people who wish to dispute some of them. Certainly, I would not want to paint a picture of a gloomy opportunity situation for salesmen. My own company is currently handling over 100 selling jobs for over 30 companies so things are far from desperate. It's just that one becomes accustomed to an industry where every computer company is

by Alan Williams

The author is a director of Sales and Marketing Recruitment, of Victory House, Regent Street, London W1 and consultant within Sales and Marketing Services, a association of companies providing facilities for training, market research and the recruitment of sales and sales support personnel.

Alan Williams also writes Computer Weekly's regular feature, The Sales Bit under the pseudonym of Tom. His forthcoming book, The Selling Sequence is published by McGraw Hill next year.



sure the sales operation is carrying no passengers by getting rid of those salesmen who are not achieving the results expected of them. Then they replace them with people who are more likely to succeed and go in pursuit of ensuring that their company at least maintains its share of a shrinking market.

## Delayed

One common feature of a market recession is the extension of the "selling cycle", that period of time between first contact and the buyer's decision to purchase. It is difficult to assess whether this is a reflection of insecurity, the lack of confidence to be decisive, greater difficulty in generating funds, or what. Certainly the trend that often develops in this kind of economic climate is to delay the major decisions in the hope of better times ahead and just proceed with the minor and absolutely essential projects.

This kind of environment has a direct effect on the salesmen, of course, particularly those in a new selling job and operating on an initial minimum income guarantee against commission earnings. Decisions that could have been expected during the guarantee period are delayed, and as a direct consequence salesmen can find themselves earning basic salary only, unless their management has sufficient awareness to identify the problem for what it is and arrange for the guarantee period to be extended.

It is, perhaps because of the hazards of abandoning an existing prospect portfolio and starting all over again with a new company, against a backdrop of industrial recession and typical minimum income guarantee periods of six months, that it is particularly

volume of sales than in an expanding environment, and those who don't make it are being axed, and/or management typically get to know before the troops when a company is heading for the rocks. In the other case, there is no doubt that turnkey systems houses have been badly hit by the present economic situation.

The great difficulty for this kind of sub-contractor organisation is professional credibility and long-term viability, particularly relative to those manufacturers who are able to offer a computer based solution on a sole-vendor basis. Answers to the questions such as "who is responsible for what?" and "how do I know you will still be here in five years' time?" become less plausible as time goes on. In a buoyant and expanding market where there is plenty of business for all, the average number of competitors per individual sales situation is typically quite low, and small companies can do reasonably well. Whereas, in a depressed market the number of prospects decreases and the total amount of sales activity increases with obvious results for the lower profile and less credible independent turnkey systems supplier. operating on profit margins which do not make long-term sense for anything more substantial than a "cottage industry."

For the accomplished salesman the loss of his job through redundancy or the anticipation of his employer's demise is not too much of a problem in the computer industry. There are always plenty of job opportunities for the truly successful salesmen, whether their skills lie in computer services, hardware, peripherals, suppliers, software or whatever. However, it is a completely different case for as management is concerned. One

# ata Computer Recruitment

A division of ATA Selection and Management Services, recruitment consultants to industry and commerce since 1962

## SALES EXECUTIVES. SALES SUPPORT

PRODUCT	LOCATION	BASIC	GUARANTEE	REALISTIC EARNINGS
BUSINESS SYSTEMS Very powerful mini with full commercial and W.P. packages Rigid and Floppy Disc	Home Counties Manchester, Bristol Birmingham, Scotland	to £8K	to £12K	£18,000
MICROS Selling to Major OEMs and computer manufacturers	London / Chelsea Wills	to £14K	—	£18,000
PERIPHERALS Selling range of disk drives, printers and screens	Home Counties, West Country, Midlands, Lancs / Yorks	to £7.5K	None	£11,500
WORD PROCESSORS Stand alone and shared logic	Home Counties, West Country, Midlands, Lancs / Yorks, Hanis, Scotland	to £10K	None	£18,000
BUREAUX Full range of bureau services	London, Bristol, Exeter, Manchester, Birmingham	to £9.5K	—	£14,000
MODEMS and Data Transmission devices	Manchester, London, Avon / Wiltshire, Hanis	to £6.5K	to £10K	£15,000
TIME SHARING Commercial and Technical	Bristol, Birmingham London	to £7.5K	—	£12,000
FAX Established range	London, Manchester, Bristol	to £7.5K	to £10,700	£14,000
CUSTOMER SUPPORT	Nationwide	High demand for experienced ANALYST/PROGRAMMERS particularly with ASSEMBLER, BASIC OR commercial FORTRAN knowledge.	—	—

For further information on the above and other opportunities telephone in complete confidence the appropriate ATA Computer Recruitment Office.

## WHEREVER YOU ARE, WE'RE ON CALL TO ASSIST YOUR CAREER

<b>LONDON</b> (01) 837 0781 230 St. Pauls Rd. W1N 5HG	<b>MANCHESTER</b> (061) 832 5886 88 Cross St. M2 4LA	<b>BIRMINGHAM</b> (021) 643 1984 Wellworth Building 102 New St. B2 4HQ	<b>BISHOP'S STORTFORD</b> (0278) 506464 20 Boslow Lane Bishop's Stortford, Herts	<b>BRISTOL</b> (0272) 21 1035 Equity and Law Building 36/38 Baldwin St. B5 1JH	<b>EDINBURGH</b> (031) 226 5381 Anglo House 24/26 Frederick St. EH2 2JR	<b>CRAWLEY</b> (0293) 514071 36 The Broadway	<b>SOUTHAMPTON</b> (0703) 37555 23 Cumberland Place SO1 2BB
----------------------------------------------------------------	------------------------------------------------------------	---------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------	----------------------------------------------------	----------------------------------------------------------------------

## PROGRAMMERS

**£17,000 (West of Scotland)**  
The installation of a new IBM 4381 DPS/VS computer has created challenging and interesting opportunities in the U.P. department of a national leading organisation. These positions will entail development of entirely new on-line CICS and JCL database systems for a wide range of commercial applications which encompasses order processing, stock, ledger and merchandise control programmes. This exciting package includes profit sharing, subsidised meals and staff discounts, as well as the normal benefits associated with a major national company.

## CICS PROGRAMMER ANALYST

**£17,500 + Allowances (Central Scotland)**  
A first class opportunity to join a young team developing CICS systems for the European operations centre of a major international manufacturing group. The company at present operates on IBM 370/1 VM under QOS VS running a 24 hr CICS programme accessed through 200 terminals in their three locations in the U.K. and Europe. Your responsibilities in CICS will include highly valued and well paid development, including studies and user requirements to be fully revised. Full benefits as associated with a major company unit which may be paid where applicable.

## RPGII/CPP PROGRAMMER

**(North-East Scotland)**  
Current expansion within a well established manufacturing company involved in the oil industry provides an excellent opportunity for a Programmer with experience in ICP. This exciting and challenging position will involve program development on an IBM System 3-150 and System 35, to support their advanced On-Line Manufacturing Systems from order intake to P and L. This position carries an attractive salary and full benefits as well as relocation allowance where applicable.

For further details telephone Roy Figures on 031-228 5381  
ATA COMPUTER RECRUITMENT  
24/26 Frederick Street, Edinburgh

## Real Time, Real Money

UP TO £15,000

We are urgently seeking Software Specialists with 3 years' + Real Time experience, DEC RSX11, Macro 11 and/or Coral for clients in London, Herts, Middx. & Beds., and Programmers upwards, with 1 year + Real Time Mini and/or Micro experience and configuration i.e. D.G., Ferrenti, T.I., Intel Motorola, etc., for London and Home Counties, high or low level languages. All positions are permanent and applications include:

Process Control, Communications, Military Systems, Systems Simulation, C.A.D. Graphics, Real Time Operating Systems, Message/Packet Switching, Compilers and Language Processors, Front End Software, Networking, Numerical Control, Terminal Emulators and many more.

The following vacancies in particular, require very specific experience.

**Numerical Controller — Middx. — £12,500 —** Minimum of 8 years computer experience, of which 2 years' at least must have been spent in numerical control. Group leadership experience is desirable, Fortran is essential, configuration is not important.

**Projects Controller — Cheshire — £15,000 —** 10 years + Real Time experience, preferably in defence.

**Image Processing Specialists — Germany —** To commence early 1981. C.A.D. Graphics, Pattern Recognition experience etc. Excellent salary + tax free expenses.

For more information dial either number, you'll get a personal answer from Beryl McLaren or Shaun Patel whatever the time of day or night or even weekend — 01-836 9719 or 836 9882.

**Jupiter** Computer Appointments  
(Recruitment Consultants)  
(Real Time Mini's Place)  
Suite 41/42, 12-13 Henrietta Street,  
London WC2

## Analysts/Programmers (Fortran and Basic)

**EDINBURGH up to £7,349**  
There are a number of vacancies in our Technical Computing Team for Applications Programmers with experience of working in Fortran IV.

The work of the team is varied and includes development and maintenance of real-time data acquisition and control systems for the gas transmission systems, B Working in conjunction with Operational Research Officers on applications programs for Cromemco and other micro-computer systems, d Assisting many departments of Scottish Gas to program HP85 desktop computers for knowledge of BASIC would be useful for this aspect and d Acting as general consultants on all non-DP computing work.

The successful applicants, male or female, will report to the Manager, Technical Computing and will be expected to cover the complete spectrum of computing from user liaison through analysis, programming and documentation to user training and liaison with hardware engineers.

The initial salary for the posts will be within the range £6,275 — £7,349.

Applications for these challenging and exciting posts are invited from programmers with at least two years experience of FORTRAN and preferably some knowledge of BASIC. Consideration would also be given to graduates recently qualified in Computer Science for whom a place may be found on our Training Programme.

Application forms, quoting ref. 4561/CW, are available from: Appointments Officer, Scottish Gas, Granton House, 4 Morine Drive, Edinburgh EH5 1TB or telephone 031-552 6271 ext. 201 or 251.

**SCOTTISH GAS**

## ANALYST/PROGRAMMERS

London IBM Cobol/PLI/Mark IV  
Tel: Roger Barnes on 01-828 4200  
485 Cophall Avenue, EC2R 7DA

## Reed Executive

The Country's most successful Recruitment Service

## COMPUTER SERVICES MANAGER

Milton Keynes £8,000

A dynamic and prolific young company with a tremendous growth record over the last ten years needs a Computer Manager to match, and one who can demonstrate a high level of professional competence. Experience of IBM Systems 32/34 would be useful and a good knowledge of RPG II essential. Reporting to the Administration Manager, the successful applicant will have total responsibility for the installation and will be encouraged to develop it. Conditions of employment are good, the general working environment excellent and there are very real career prospects. Where necessary relocation expenses would be available to this attractive area.

Telephone 021-643 7226 (24-hour service) quoting Ref. 1180/CW. Reed Executive Selection Limited, 6th Floor, The Rotunda, Birmingham B2 4PB.

The above vacancy is open to both male and female candidates.

## Freelance Opportunity overseas

**West Africa:** systems designers and programmers with extensive IBM COBOL. A degree of equivalent is necessary, and applicants should be over 30.

**Kuwait:** analysts, programmers, designers and database software support specialists. Sound 2980/IDMS/VME-B experience is required.

Remuneration, conditions and support are as you would expect from a leading international software house. Successful applicants will be joining well-established P-E teams on site.

Apply initially to Colin Burnside or Paul Davis at our Egham address, or to Geoff Mackenzie at Manchester.

**PE** P-E Computer Services Limited  
Park House, Egham, Surrey, Egham TW20 2JH

## FRANCE

Informatica

SYSTEMS AND NETWORKS SUPPORT

We require

## SYSTEMS PROGRAMMERS

for our customer support group in Paris. If you have at least 3 years' experience in generating and maintaining software on any of the following systems we would be interested in working with you. A basic knowledge of French is desirable.

IBM 370, 303x, 43xx  
CIH866 and 64  
DEC PDP/11

SOFTWARE DEVELOPMENT

## A SYSTEMS PROGRAMMER

with CIH866 experience. DMIV useful. French not essential.

APPLICATIONS

## 15 ANALYST/PROGRAMMERS

Minimum one year's experience with the ability to speak French. We are very interested if you have any one of the following:

IBM assembler DBOMP  
CICS DL/1  
IMS TOTAL  
CIH866.64 IDS, TDS  
PRIME UNIVAC any machine

If you are a Project Leader/Manager with project implementation experience covering several European countries please contact us.

**Contract and Permanent Personnel Needed**

Tel: Paris 544 0855 or write with phone number and c.v. to  
Alan Hussell, Informatica  
40 rue des Saints Peres  
PARIS 75007



## OCC Contracts Personnel

## Middle East

c £25,000

In addition to the tax free remuneration there is free accommodation, local transport, air fares, medical and recreational facilities etc.

The following personnel are required for long-term assignments in a location offering an excellent working and social environment. Large ICL 1900/2900 and IDMS experience for all positions is desirable.

**Database Analyst Designer**—IDMS experience preferred.  
**Database Software Specialist**—IDMS/VMEB essential.  
TP preferred.

**Systems Analyst**—for a gas accounting system.

**Analyst Programmer**—VMEB/COBOL + IDMS experience ideal.

**Senior Programmer**—VMEB/COBOL essential.

For further details please contact Roger Allington (day/evening)

on 04427 2299  
1 Shooterway Park, Berkhamsted, Herts. HP4 3NX  
Ref: 1177

Berkhamsted (04427) 2299

## Technical Support

**Burroughs Large Systems**  
**£5,500-£8,000+substantial benefits**

Our Systems Software Department has a vacancy for an experienced Programmer, wishing to develop their career in technical support. Ideally, candidates should have:

- Working knowledge of ALGOL or COBOL
- Experience of Burroughs or ICL 2900 hardware, and operating systems
- Familiarity with hardware operating processes

Salary will depend on relevance and depth of experience.

Please contact Janet Meadows for further details: TSB Trust Company Ltd, P.O. Box 3, Keens House, Andover, Hants SP10 1PG. Telephone Andover (0264) 62188 extension 231. Ref. SS/SP.

TSB

TSB Trust Company Limited

SOUTH GLAMORGAN COUNTY COUNCIL  
ENVIRONMENT AND PLANNING DEPARTMENT

## SENIOR ASSISTANT ENGINEER

SO/PO1(1) £6636-£8097 p.a.

(Pay award due from 1st July, 1981)  
This post is in the Research and Development Group of the County Surveyor's Department and the duties will include use of an 11" x 14" computer for engineering applications (mainly Highway, Traffic, and Structural) Graph plotting and on line manual to data, no available data programs are written in FORTRAN and the main input the VME 11 operating system. The work consists mainly of the development and implementation of new program units and the maintenance and enhancement of existing ones.  
Applicants must be Chartered Engineers, or Members of the British Computer Society and should have experience in computer programming.  
A contribution of up to £750 will be considered in appropriate cases for removal and associated expenses.  
Application form from the Personnel Officer, Floor 5, County Headquarters, Newport Road, Cardiff. Telephone (0222) 499022 ext. 3411/2.  
Closing date: 12th November, 1980 (Ref. S235) (3178)

CHIEF DATA CONTROLLER  
CIRCA £6,000 P.A.

We require an experienced Data Control Clerk to take charge of a small but busy Data Control Department. This would involve re-establishing the Department within the Company.

Please apply with full personal and career details to:

Mr. Ivan Green  
Operations Manager  
Tavistock Computer Systems Limited  
8MA House  
Tavistock Square  
London WC1H 9JD  
Tel: 01-388 1587

## PROGRAMMERS

London IBM Cobol/PL1/Mark IV

Tel: Roger Barnes on 01-628 4280  
4&6 Copthall Avenue, EC2R 7DA

SIDA

## BANKING

LONDON &amp; SURREY

Analyst's Analyst Programmer and Programmer to work on Bury  
111. Must have banking experience. Must have experience  
+ 1111

## SENIOR PROGRAMMERS

WEST IN LONDON/CITY/SURREY  
Must have 3+ years' IBM programming experience, preferably  
gained on any mainframe. 1111 DATA BASE FOR USE  
+ 1111

## ANALYST/PROGRAMMERS

RICHMOND  
A fast moving business bank. Expanding rapidly and  
Programmers. Applicants must have at least 18 months COBOL  
programming experience, ideally on mainframe or microcomputer.  
range database management is required.

## SENIOR SYSTEMS ANALYST

CITY  
For this senior position, applicants must have designed or  
implemented at least 1 major system. Experience of technical  
as a common of applications would be an advantage. Degree  
essential. Must be able to supervise staff. Very good career  
benefits.

## PROGRAMMERS

Central London City. Excellent benefits. Excellent career  
opportunities. Applicants must have at least 18 months COBOL  
programming experience, ideally on mainframe or microcomputer.  
range database management is required.

## PROGRAMMERS

Central London City. Excellent benefits. Excellent career  
opportunities. Applicants must have at least 18 months COBOL  
programming experience, ideally on mainframe or microcomputer.  
range database management is required.

## AMES PERSONNEL

Employment Agency Suite 14, Physics Chambers,  
119-121 Shaftesbury Road, W1R 1BA. Tel: 01-434 1100

METHROPOLITAN BOROUGH OF  
Rochdale

TREASURER'S DEPARTMENT

## SYSTEMS ANALYST (2 posts)

AP/50/1111/1111 (Ref: 1111)

## TECHNICAL SUPPORT

## PROGRAMMER

AP/50/1111/1111 (Ref: 1111)

## PROGRAMMER (3 Posts)

AP/50/1111/1111 (Ref: 1111)

(Pay award pending for all posts. Salary related to experience)

For further information contact Mr. A. Martin, Rochdale  
521100 Tel: 2111  
Application forms and further details are obtainable (by  
quoting appropriate reference number) from: The Chief  
Personnel Officer, PO Box 88, Municipal Offices, Smith  
Street, Rochdale OL16 1XO. (Tel: Rochdale 47474 Ext. 99)  
to be received not later than Monday, 10th November, 1980

## The symbol



National Girobank on  
MERSEYSIDE is growing fast and  
developing new and competitive  
services for the 80's in competition  
with the High Street banks. It  
already offers comprehensive  
banking to over 800,000 personal  
account customers and a range of  
specialised services for the major  
commercial customers, public  
utilities, government departments  
and local authorities.

of our  
success,

National Girobank  
is in the process of replacing ICL System 4/70's with ICL 2900 series under VME/B. In addition the  
introduction of new data capture and document sorting techniques based upon optical character  
recognition and visual display data-entry is now under way.

There are now vacancies for the following positions:-

## Systems Analysts and Senior Programmers: Salary to £8,432 (Review April and July 1981)

Our Client requires experienced Systems Analysts of proven ability to work in areas such as on-line systems design, data-entry and enquiry systems, data communication and network design. Additionally our Client is seeking Senior Programmers with experience of COBOL and Structured Programming techniques. At least 4 years' D.P. experience is normally required, preferably to include some supervisory experience. Previous ICL 2900 background would be an advantage, although applicants with experience on other large mainframes with financial/banking applications could be equally valuable. Positions are on a salary-scale rising to £10,554 per annum.

## Junior Analysts and Programmers: Salary to £6,743 (Review April and July 1981)

Applications are required from Junior Systems Analysts and Programmers with a minimum of 18 months' experience gained in a commercial Data Processing environment, working on Systems Development as a Systems Analyst, Analyst/Programmer or Programmer. A banking or financial systems background is advantageous. Positions are on a salary-scale rising to £8,728 per annum.

The above positions are for specific vacancies, however, owing to the growth in business activity, there are other posts available for applicants with a sound commercial Data Processing background.

Successful applicants will be based at Bootle, Merseyside, within reasonable travelling distance of North Wales, the Lancashire Coast and Lake District. Flexible working hours are in operation.

## Relocation packages are available.

For further details please ring Alan Morton on 061-491 1666.

**NATIONAL**  
**Girobank**  
The king size bank at your post office

Computer People  
North

Sovereign House  
Stockport Road, Cheadle  
Cheshire SK8 2EA  
061-491 1666

51A St Paul's Street  
Leeds  
LS1 2TE  
0532-34841

Computing  
Services  
Association

VU group

## An Announcement

Our client, one of the world's foremost oil companies, is consolidating its worldwide function of Petroleum Engineering and Exploration from its developed complex at Dhahran, Saudi Arabia. In support of those activities they are building one of the most advanced scientific/technical computer centres in the Middle East. The centre is due for completion by October 1981, and will consist of 4 3033's and some of the world's most sophisticated software. To assist in this massive program they urgently need to recruit SENIOR SYSTEMS ANALYSTS with between 3 to 10 years' experience with large IBM systems, and a background in PL/1 or FORTRAN to work on Capacity Planning and Analysis. There are also numerous opportunities for data management systems, and PETROLEUM ENGINEERING SYSTEMS ANALYSTS who are familiar with production, reservoir, and drilling engineering technical concepts.

These senior and challenging opportunities are offered to men or women educated to degree level, who could expect a starting salary of up to £21,000 net plus a benefits package which rates amongst the most comprehensive and generous in the Middle East.

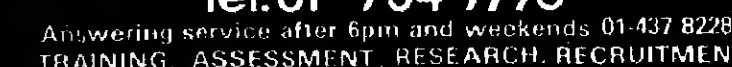
Please write or phone Peter Madams on 01-240 1456 (reversing charges) quoting PM/A67 for further details.

Computer People London (VU group)  
VLI House 68-69 St. Martin's Lane, London WC2N 4JS

01-836 8411

Recruiting for Clients







## Freelance Programmer Analysts

Plan your next project now!  
We need reliable professional people to work on interesting contracts in London and Home Counties.  
If you are good—we can help you.

PL/1 DOS+OS, IMS  
COBOL OS+DOS, CICS/IMS  
RPG II System 34  
DATABUS Ventek 5500/6600  
IBM SYSTEMS PROGRAMMERS  
HP 3000 COBOL+IMAGE

Contact us now even if you are not free for a few months and reap the benefits of working for a Software House.

Ring: Sheila Fox or Paul Hill  
**Link Associates Limited**,  
24a High Street, Chesham, Bucks.  
(02405) 4922



## Systems Analyst

Up to £9300 (new salary award pending)

Our work is varied, interesting, cost effective, benefits the community and provides worthwhile careers for people with the right talents.

We have recently installed a 8 megabyte ICL 2972 to support the next phase of application development from our exciting development programme — including planning applications, vehicle fleet maintenance, housing repairs, social services records, personnel records and the introduction of a new modern cash handling equipment, and affecting most of our departments. Where practical, TP and IDMS software will be used. A host of other applications are in the pipeline and the demand for data processing solutions is becoming even greater.

To meet this demand, you must be an experienced Systems Analyst with a proven track record of successful implementations. You will work in a project team whose main responsibilities include financial management, recreation and social services applications. We offer a 35-hour week with flexitime; 28 days annual leave plus 10 other days; a season ticket scheme and a contributory pension scheme. Further details from Nick Wright (01-874 6464 ext 235)

Application forms from Director of Finance, Town Hall, London SW18 2PL. (01-874 6464, exts. 350/372). Closes 18th November.

## Wandsworth

(3378)

## Lecturer — Digital Systems

London S.E.1

As part of Babcock International we are among the leading specialists in the field of analogue and digital instrumentation and control systems. The Company has a multi-million turnover and is a forward looking industry in design and engineering in most fields of industry.

Continued expansion has created the vacancy of our Training College, Great Dover Street.

Candidates should be appropriately qualified to lecture on micro and mini-computer systems and have

considerable industrial/commercial experience. Some travel involved.

Benefits include an attractive salary, excellent prospects within a world-wide organisation, excellent employment conditions, relocation expenses where appropriate.

Application forms from Mrs P. Cooke, Personnel Officer, Babcock, Bristol Limited, 218 Purley Way, Groydon, Surrey. Tel. No. 01-888 0400.

**Babcock-Bristol Ltd**  
A member of the Babcock Industrial & Electrical Products Ltd. Group

Every Solartron project is the same as the last one...

...totally different

## Project Leaders and Analyst/Programmers (PDP II with RSX-11M/MACRO)

Our business is the creative use of advanced electronics and computers to solve individual problems across a wide range of industries. And, since the solutions have to be as individual as the problems, every project is custom-built.

Thus we can promise you a constant challenge to your technical skills and innovative thinking — and the only routine thing you do are to come in the morning and go home at night!

What's more, since we are diversifying and expanding into all sorts of new work, we will be able to reward your success very quickly in terms of promotion through a flexible management structure.

Our products include Industrial Systems and Radar Simulation Equipment.

The Industrial Systems Group develops and supplies measurement and control systems for such fields as power generation, process plant and engine test.

To do this, it brings together all the necessary systems design application software, project engineering and contract management expertise required for complex data acquisition projects.

Our Radar Systems Division designs and supplies simulators for use in training merchant, naval and air traffic control personnel, in the use of modern radar equipment and navigational aids.

We are looking for the following men in whom:

### Project Leaders

Either an experienced Project Leader or an outstanding Analyst/Programmer, you should be able to lead teams of up to 6 computer professionals and be looking for wider management responsibilities.

You should have 3+ years experience using PDP 11 and RSX-11M and/or MACRO and you are probably already working in a big user environment or software house.

### Senior Analyst/Programmers

£7,000 — £10,000  
You will be responsible for writing quality software for established systems and methods and should have 2+ years experience of PDP 11 using RSX-11M or MACRO.

We expect you are currently working in a user environment in software house. There is a very good promotion to Project Leader within 12-18 months.

### Benefits

In addition to the quoted salaries, we offer all the benefits you would expect from a large successful company, including relocation expenses to this attractive part of Hampshire where we enjoy an excellent working environment.

For further details please ring or write quoting reference CW110 to: Ian R. Crane, Resourcing Manager, The Solartron Electronic Group Limited, Victoria Road, Portsmouth, Hampshire GU14 7PW. Telephone: Portsmouth (STD 0232) 44433.

INTERVIEWS CAN BE ARRANGED IN CENTRAL LONDON

SOLARTRON

Schlumberger

3390

## CALMA

INTERACTIVE GRAPHIC SYSTEMS  
A division of United Computing Systems Inc.

is an American based company specialising in the production of computer systems for design applications. These applications cover integrated circuit, plant layout, mapping and mechanical design. We are growing rapidly and have just opened a new European customer support facility located in London. To support this expansion, we require the following staff:

- SENIOR HARDWARE TECHNICAL SUPPORT ENGINEERS**  
Applicants should possess several years experience as computer service engineers. Experience in microcomputers or plotting systems would be particularly relevant. c. £8,500 + car.
- HARDWARE REPAIR CENTRE TECHNICIANS**  
Although previous computer experience would be desirable, applicants possessing a sound practical and theoretical grasp of electronics will be acceptable. As full training will be provided. c. £7,500.
- DIAGNOSTICS PROGRAMMER**  
This position is likely to suit either a very experienced Technical Support Engineer, possessing an aptitude for programming, or a Systems Programmer with a keen interest in hardware.  
The work will involve writing and control of all types of diagnostic and test programs. It will also involve the provision of technical support in situations where the exact nature of the problem requires definition. c. £10,000 + car.
- HARDWARE TRAINING INSTRUCTOR**  
Responsible for the training of staff in the use of computer systems. This is likely to be already employed in this capacity, and has previous experience in the field of computer systems. Should be a good communicator and capable of planning training for a diverse range of products. c. £8,500.

Conditions of employment will reflect the high grade of people being sought and will be very competitive.

PLEASE CONTACT: CALMA COMPANY, REVELL HOUSE, 88 BOND STREET, LONDON W1P 2PL

## ARAMCO SYSTEMS ANALYSTS

up to **£22,000** per year after tax.

ARAMCO, the Arabian American Oil Company, is consolidating its worldwide function of Petroleum Engineering and Exploration in Dalian, Saudi Arabia. In support of these activities we are building one of the most modern scientific/technical computer centres in the Middle East.

Initial configuration will encompass four large IBM systems (3033) and many specialised display devices. The centre is due for completion in October, 1981 and to be fully operational by January, 1982. State of the art operating systems, hardware and application systems will be installed and the centre will support a large research and development effort.

Plans are in hand to install some of the world's most sophisticated software in respect of reservoir modelling, well performance analysis, seismic data processing and large database systems.

Experienced computer professionals, with a degree or equivalent, in computer science are required now.

**SYSTEMS ANALYSTS** to work on capacity planning and service level analysis, system modelling, physical planning and change/upgrades. A minimum of 3 years' experience with large computer systems, preferably IBM, and specific experience with MVS/SE, MVSNE, SNA, NJE usage is required.

**COMPUTER SYSTEMS ANALYSTS (GEOPHYSICAL)** to develop, install and maintain geophysical and geological computer applications systems. Applicants should be conversant with seismic processing techniques or geological data management systems. Systems design and programming knowledge is important and experience with large IBM systems, Fortran and PL/1 is a must.

**COMPUTER SYSTEMS ANALYSTS (Petroleum Engineering)** to develop, install and maintain technical computer applications in support of the petroleum engineering function. Applicants should be conversant in production, reservoir and drilling engineering technical concepts. Familiarity with large IBM systems, Fortran and PL/1 is required.

Long-term family status contracts are offered, together with low rental air-conditioned accommodation and free medical care. Education assistance for dependents both in Saudi Arabia and the U.K. Excellent sports and recreation facilities include swimming pools, beaches, sports clubs, cinema, T.V., etc. There is also an overseas cost allowance of at least £1,500 per year.

Please telephone Mr. John Weiner of PMC on Harrogate (04231 80544 TODAY to arrange interviews in London on November 24th, 25th and 26th or Aberdeen on November 27th, 28th and 29th.

These outstanding career opportunities are too good to miss, so telephone John Weiner NOW.

34111

**PMC INTERNATIONAL RECRUITMENT**  
8 East Parade, Harrogate, North Yorkshire HG1 1EL

## OPERATIONS

**IBM OS SHIFT LEADER ESSEX £7000**  
Mid Essex bureau are looking for an IBM 370/158 Shift Leader with 2 years' experience. Ideal opportunity for extension of man management skills. Ref. V/4524

**IBM 3031 OS OPERATOR LONDON £5800**  
City bank require dynamic operator with 12 months' OS VSI experience to join go-ahead D.E. Department. First-rate benefits package includes preferential mortgage and loan scheme. Ref. V/4533

**IBM DOS SHIFT LEADER SURREY £7300**  
Mature Shift Leader required for this North Surrey Computer Department. If you have between three and four years' experience using shadow, we want to hear from you. Ref. V/4748

**IBM MVS OPERATOR LONDON £5500 free travel**  
Financial organisation in cheery require an operator with 12 months' experience for their 370/158. Knowledge of JCL an advantage. Excellent benefits package offered. Ref. V/4744

**IBM OS OPERATORS SURREY £5500**  
Overseas bank in Surrey require operators for their 4331 so if you have around 16 months' to 3 years' experience give me a call. First-rate benefits package including excellent loan scheme. Ref. V/4758

**ICL 1900 SHIFT CONTRLR. SURREY to £8100**  
Industrial company in Surrey are still urgently looking for an experienced person to manage a shift using G11. Good prospects for training and progression.

**ICL 2900 OPERATOR LONDON £5000-£6000**  
Well-known retail distributor in West London, require an operator with 2 years' G11/DME experience to assist in the running of the company's 2958. Discount on company products.

**ICL TECHNICAL SUPP. (Days) BEDS. £6000**  
Well-established industrial company in Bedfordshire, need a person with at least 18 months' experience of macros/operating systems, preferably G11/DME. Very good career opportunities.

**ICL 1900/2900 OPERATOR SURREY ENEG.**  
Manufacturing company in Surrey are seeking an experienced G11 operator for their twin machine installation. Good prospects and no nights.

**ICL G11/VMEB OP. SURREY £6000 +**  
Internationally-known electronics company in Surrey require a first-class technical person for this position. Excellent prospects and conditions.

**UNIVAC 90/40 LONDON £6000**  
Good career prospects for the right applicant are just some of the benefits this company offer. They will also pay half of your travel expenses. Ideally you will have at least 12 months' operating experience working with OS3, and also wish to work 2 shifts only. Ref. 4763

33851

datascene 01-439 7871

24 hour answer phone

24 hour answer phone

24 hour answer phone

24 hour answer phone

# Computer Weekly is moving...

From Monday, November 10, 1980, Computer Weekly's editorial, advertising and production offices will move from Dorset House, Stamford Street, to:

**Quadrant House**  
**The Quadrant**  
**Sutton, Surrey SM2 5AS**  
**Tel: 01-661 3500**  
**Telex: 892084 BISPRS G**

## JUNIOR CONSULTANTS

c. £9,000



+ 2 litre Capri

## SOUTH BERKSHIRE

Our client, a young, enthusiastic and rapidly expanding computer systems company, urgently needs additional junior consultants with good business systems experience, preferably, but not necessarily, gained on PDP 11 equipment. These are responsible positions and will entail extensive customer involvement. Please write or telephone Clive Williamson NOW for more details and an application form.

**COMPUTER AND MANAGEMENT PERSONNEL**  
75-76 Little Britain, London EC1  
Tel: 01-608 8900 (24-hour service)

3382

## Morsey Regional Health Authority

## 3 SENIOR SYSTEM DESIGNER/PROGRAMMERS

to take responsibility for leading teams on the development, control and maintenance of systems and programming work in the following areas of work:

- Financial applications.
- Hospital Administration, information and statistical systems.
- Advising on the use of microcomputers in all departments of the NHS. In this respect, microcomputer laboratory facilities are available for the practical work involved in testing and evaluating microcomputer software and hardware.

Salary scale: £8,017 to £9,746 per annum.

NHS Superannuation Scheme.

Candidates wishing to informally discuss the posts are welcome to telephone Ms Fawke, Regional Computer Services Office on 051-709 0515.

Application form and Job Description available from the Regional Personnel Officer, Withers House, The Strand, Liverpool L2 7RW. Please quote Ref. 888. Closing date: 21st November, 1980.

33721



# DP salaries still ahead of inflation

THIS year has proved to be one in which DP has taken off in a big way with distributed processing coming into many other areas than its conventional application to accounting.

In recruiting for appointments in manufacturing, marketing, design and finance, a recurring theme has been the requirement that the people appointed should have first-hand experience.

In a number of major users, established DP departments have been disbanded to make way for minicomputers capable of running a number of real time applications simultaneously with multiple terminals sited in user departments.

Nowhere is the change greater

The author, LAWRENCE LOCK, is managing director of Management Personnel, the recruitment, selection and advertising consultants. Its autumn salary survey for South-east England showed that most DP salaries had increased ahead of inflation. This article looks at what is perceived as an increasing demand for computer personnel.

than in the office, with secretaries becoming proficient in the use of terminals for word processing. This is quickly broadening into information processing with, for example, personnel departments maintaining employee records in this way with almost instant access to the records of particular employees.

This can cover such tasks as the

automatic generation of letters for union or sports and social club membership, the pensions scheme, training courses, performance appraisal, salary review and long service.

The list processing aid is used to select automatically and write to employees based on their age, joining date and qualifications.

The information revolution is upon us and in at least one large company we know of electronic mail already exists, with messages transferred between 2,000 users of the system.

The upsurge in DP is reflected in the recruitment scene. Many of the current job opportunities are with computer manufacturers and distributors for applications analysts and programmers, electronics technicians and sales and marketing people.

## Short

In a recent survey of 50 firms in the south east, only computer manufacturers said they would be expanding, several of whom said they would need new staff.

The Institute of Manpower Studies' January report estimated that the UK is short of 17,500 DP staff, particularly programmers, suggesting a failure by users over

the past few years to take in trainees.

Very little appears to be being done to alleviate the shortage, employers preferring to recruit experienced computer skills.

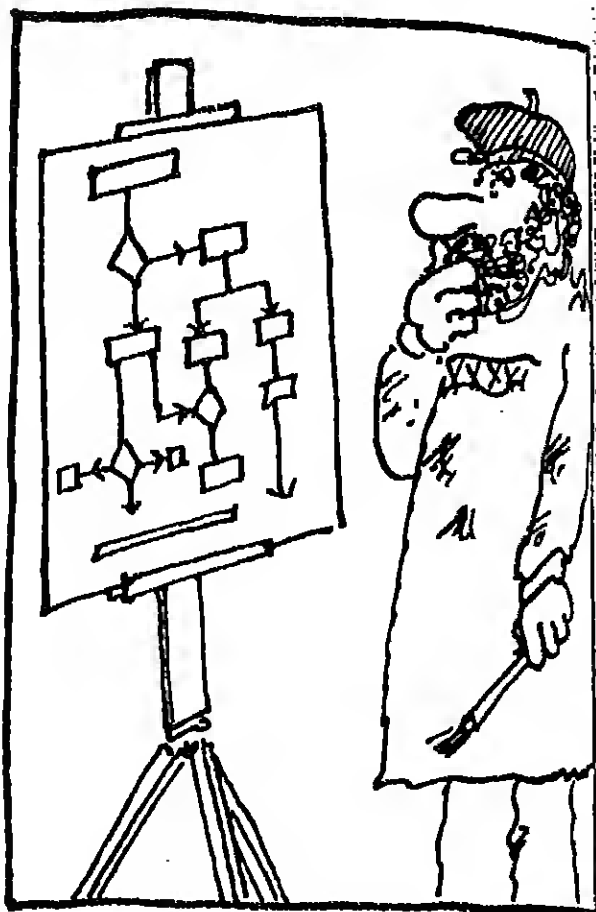
The report said: "Demand for trained and experienced computer people, particularly analysts and programmers, is again running ahead of supply. The shortage has had the effect of bringing about some fairly substantial increases in this section, although overall only in the order of 24%.

## Lower

"The role of management services managers seems to be less in evidence than it was two or three years ago and, although well rewarded in large companies, seems to be an either/or situation in the small to medium sized company, with the data processing manager often fulfilling a similar function. Management services managers have increased by 10% and 12.5% at the 'high' and 'low' respectively.

"The median is lower than a year ago, bringing it only slightly ahead of data processing managers whose salaries have increased by between 16% and 20%. Systems and programming managers are up by 15% at the 'low' and median but only 5% at the 'high'.

"Project leaders are up between 16% and 20% but senior systems analysts have moved ahead by 25%, though systems analysts only between 13% at the 'high' and 21% at the 'low', with a median of 18%. Analysts/programmers have moved up by between 22% and 25%.



"From a sample of 22 systems programmers, substantial increases of between 30% and 50% have been recorded, suggesting that last year's sample was unrepresentative.

"Programmers appear to be the area of greatest shortage. Analysts/programmers, senior programmers and programmers all recorded increases of between 25% and 42%. Trainee programmers, too, have moved ahead with 25% at the 'low' and median but only 11% at the 'high', thus narrowing the range paid for this job.

## Opportunities

"Operations staff generally have moved up by between 20% and

30% with the exception of data control supervisors at the 'low', 10%, and senior operators at the 'low', 10%, and operators at the 'low', 50%. Operators are up by 28%, trainee operators by 30% and presumably in an attempt to attract more people into the Data control supervision role between 5% and 10% for preparation and data control have moved ahead by 25% and 25%.

My conclusion is that employment opportunities have been greater in DP and data control area in which this year's school-leavers university leavers should direct their attentions to the possibility of some leading computer manufacturers to take their quota of graduates.

# WORD PROCESSING ON THE IBM SYSTEM/34 WITH HIGH QUALITY PRINT SUPPORT

Altergo announces

a major enhancement release of WORDPOWER with comprehensive Word Processing

High quality print output via the CBT 5200WP.

The CBT 5200WP attaches directly to your system/34 and emulates the IBM 5256 Matrix Printer with complete system software compatibility.

For applications where impeccable print quality is required WORDPOWER with the CBT 5200 sets the standard.

Call Altergo now on 01-631 1666

PLEASE SEND ME FURTHER INFORMATION ON WORDPOWER

NAME .....

TITLE .....

COMPANY .....

ADDRESS .....

PHONE .....

IBM COMPUTER .....

Send to Altergo Business Systems Limited, 113 Great Russell Street, London WC1B 3NQ

**altergo**

THORBAR

Greenock House 19 Cuckfield Road Hurstpierpoint Sussex BN6 9RF

Telephone: Hurstpierpoint (0273) 833848

## CENTRAL LONDON MANAGEMENT CONSULTANTS CIRCA £9,000 PER ANNUM

This is an opportunity for a number of D.P. professionals with 2-5 years' experience to join a large International firm of Management Consultants.

Our clients undertake a wide range of assignments for clients in the Industrial, Commercial and Public sectors with particular emphasis on the planning, design and installation of sophisticated, computerised management information systems. They offer unlimited career prospects in a rapidly expanding field.

We are looking for ambitious men and women aged under 28, who wish to work in a demanding, Professional environment and who possess considerable problem solving ability, as well as:

1. A sound D.P. background having progressed from Programming to Systems Analysis, possibly through to Project Leadership.
2. Good Hardware and Software experience preferably gained from more than one manufacturer's equipment.
3. The ability to communicate with all levels of user personnel and management.
4. Involvement in at least one large project from the feasibility stage through to full implementation.

A comprehensive training programme aimed at developing a thorough knowledge of business operations and specialised technical skills will include some weeks spent in the United States of America.

Successful candidates will have every opportunity for early responsibility, rapid promotion with the possibility of overseas travel at a later stage.

Please contact us either by letter or telephone so that we can arrange for immediate interviews to take place either in London or the South.

## RECESSION! WHAT RECESSION?

FEES TO £600 P.W.

Programmers and Analysts register now for both short and long term contract assignments in the U.K. and abroad.

If you have at least 2 years' experience on any hardware either in a commercial or scientific environment we would like to hear from you.

Contact Teresa Gillick our Resources Administrator on

01-439 1856

and discuss your future.

Dalmeida International Limited,  
Scotney House,  
188-173 Regent Street,  
London W1B 7PB. Tel: 01-439 1856

01-439 1856

24 hour answer phone

## NEW COMPANY FIELD SERVICE ENGINEERS

Start £7,500 + Car + O/T + Benefits

A major American manufacturing concern is launching a field service organisation from scratch to support its activities in London and Home Counties. This could be your opportunity to gain experience on a wide range of prestige firms and their applications, whilst enjoying the prospects only offered by a new venture like this. Start at £7,500 + car + overtime + benefits. If you are a service/customer engineer with good academic background, computer experience, live in one of the above locations, then take a big stride forward to an exciting career by calling today. Cops. Ref. 2239

AB EXECUTIVE 01-549 6441

## COMPUTER SCIENTISTS -ENGINEERS

### FOR DEVELOPMENT OF NUMERICAL ENGINEERING SYSTEMS

Kongsberg Data Systems are establishing an additional Software Group in the Maidenhead Area to carry out development of several products in their Numerical Engineering Systems range.

Enthusiastic Software Analysts/Programmers with engineering, computer science or mathematics qualifications required to design and implement innovative systems in CAD, CAM, NC and integrated manufacture. Occasional overseas travel is to be expected.

Experience in FORTRAN, ASSEMBLER, PDP11, RSX11 would be relevant. Enthusiasm to work effectively on demanding projects and an ability to work to exacting time scales is evaluated as highly as academic qualifications. Salaries are competitive with BUPA, other social benefits and relocation assistance as appropriate.

For an application form please write or telephone Sheila Cooke on Maidenhead (0628) 20202.

KONGSBERG DATA SYSTEMS

St. Peter's Road, Maidenhead, Berks. SL6 7QU

## MANEX

PROJECT MANAGERS to £12,000 ANALYST/PROGS. to £8,000  
SYSTEMS ANALYSTS to £10,000 PROGRAMMERS £8,000  
CONTRACT ANALYSTS and PROGRAMMERS £275 to £375 p.w.

Manex offers a confidential search and recruitment service for companies seeking experienced data processing professionals. To find out more about these positions, or to discuss a change of position in the coming year, write or telephone — in complete confidence

MANEX MANAGEMENT LIMITED

28 Shepherd Market, London W1. 01-409 2016

## THE OPEN UNIVERSITY COMPUTING SERVICE

Applications are invited for a post of

### SYSTEMS PROGRAMMER

in the Systems Software Group of the above service which offers computing facilities to undergraduates and staff of the University.

The current hardware available is a DEC-2060 of the University headquarters in Milton Keynes, where the post will be based, together with two DEC-2040s located at computer centres in London and Newcastle-upon-Tyne, and access to other university facilities, principally the IBM 370/185 of the University of Cambridge Computing Service.

The post will be concerned mainly with the support of user software but will also involve hardware interfacing, communications and support of mini and micro computers.

Candidates should have a good honours degree or equivalent qualification and should have experience in the areas of systems programming or communications software and hardware.

An appointment will be made within the scale £5,505-£9,595 (under review) plus membership of the Universities Superannuation Scheme. The University offers attractive working conditions including six weeks' annual leave plus assistance with relocation to the Milton Keynes area.

Application forms and further particulars are available from The Administrative Assistant (3813/2), The Student Computing Service, The Open University, Walton Hall, Milton Keynes, MK7 5AA, or telephone Milton Keynes (0908) 863683; there is a 24-hour answering service on 663688. Closing date for applications: 21st November, 1980.

## KUWAIT SYSTEMS ANALYST

£6,500 P.A. TAX FREE (NEGOTIABLE)

Our clients are a major Kuwaiti group of companies with multi interests throughout the world, including Construction, Banking, Finance and Real Estate.

1000 Construction Division, based in Kuwait City, has its own IT HOUSE computer. A SYSTEMS ANALYST is now needed to examine their current software systems to conduct feasibility studies to incorporate new facilities that in planning and installation.

Candidates should be aged 30-35 with relevant qualification and experience in Systems Analysis probably with a Programming background. Knowledge of software in relation to construction activities, such as planning, estimating and costing will be most helpful.

Benefits of employment include fully furnished room and single housing, company car, 2-year contract with paid home leave, etc.

For full details please write to:

Mr. F. Luby on 0202 431711

01 post C.V. to

GRUPE PERSONNEL, 48 Southcombe Drive

Southcombe, Southampton, SO16 3BS



# MYRIAD

## 15 MONTHS' EXPERIENCE

N.W. LONDON

£5000-£7000

Our client, the U.K.'s leading manufacturer of specialised precision products requires two professionals to augment the expertise at their Univac 90/30 installation.

## COBOL

The opportunity has arisen for a competent COBOL programmer to assist in the development of sophisticated REAL-TIME systems. Successful applicants must be able to offer at least fifteen months' solid commercial experience and will be expected to participate fully in all areas of system design.

## ASSEMBLER

A unique chance for an ASSEMBLER programmer to assist in the smooth running of the current operating system and contribute in the development of the company's own communication software and database.

A rewarding and challenging career is therefore offered to both successful candidates. Moreover, a flexible and professional working environment support a full range of company benefits.

N2/3010

MYRIAD APPOINTMENTS LIMITED  
30 Fleet Street London EC4Y 1AA Telephone 01-353 0981 24 hours

# SYSTEMS SPECIALIST?

Take it from us —  
Distribution is different...

Today's transport and distribution industry is highly competitive and we aim to maintain our place at the head of the field. To do so we need fresh solutions and creative thinking in the crucial area of systems development.

**Systems Project Manager to £11,500 Package**  
**Senior Systems Analyst to £10,000 Package**

These key positions will be in the forefront of our development programme for the 80's, central to which is the use of computers to drive the distribution operation.

The challenge is there — and so are the rewards. We are a Unilever Company with a multi-million pound turnover and our employment package reflects this with BUPA, 5 weeks' holiday and a subsidised restaurant as standard.

For a confidential discussion regarding these vacancies, and an information package, contact our consultants, Myriad Appointments Ltd. Telephone 01-353 0981 quoting reference N3/3010.

**SPD GROUP**  
BUSINESS SYSTEMS

# Aptitude tests are entry to programming

● From page 32

teachers, books, audio or video courses — any means of learning to program. The preferred languages are Cobol and Basic; as far as the majority of employers are concerned, Algol and Fortran, both respected and respectable scientific languages, come nowhere.

Having learnt to program, don't then waste your efforts on trivial mathematical applications — but ideally look for some problems in your own discipline, or in your social life, and write programs that will provide solutions to those problems.

The people who go out and find what the business problems are and decide how they can be solved using computers are generally similar in their interests to programmers, with the important exception that they tend to prefer pursuits associated with people rather than with things.

## Chore

If this is your profile, you may well find programming rather a chore, but unless you can find one of the few employers sufficiently enlightened to recognise this essential difference between the two types of person, you are almost certainly going to have to put up with that

chore for a year or two before getting to do what you really want to.

Perhaps it may be some comfort to reflect that those accountants who become financial controllers, financial directors, or even chairmen of companies have had to spend a few years putting their little red ticks against other people's figures before they were deemed capable of thinking about the import of the figures.

The way upwards into management in computer-using companies tends to be from systems analysis rather than from programming. There is a hierarchy within programming up to programming management, just as there is for systems analysis and for computer operating. Typically, though, the boss of all these people, the data processing manager, or management services manager, has arrived at that position through systems analysis.

In an enlightened firm, this person will be immediately below Board level, or, exceptionally, on the Board. "What," you may ask, "if I find myself with an unenlightened firm?" The answer is simple: read the job ads in the back pages of Computer Weekly.

Once you are working in the hardware or software industry,

the opportunities to go anywhere and do anything are almost boundless. But if you sit in a corner and are content to do what you are given, you may well find the firm content to leave you there.

## Scope

There is enormous scope for people with ideas and initiative, and above all with the urge to do something. In many professions there is a ladder; in computing there is a tree (see Figure 1) which is constantly growing and proliferating; so forget any worries you may have had about obsolete skills.

The barrier not mentioned so far is the dreaded aptitude test. Some tests by that name are no more than general intelligence tests. Most employers demand a score higher than that needed for programming, but with the programming tree in mind, this may not be completely unreasonable. Other tests model the

programming languages of yesterday, and there can be little doubt that many potentially useful people, even many of the potentially most useful people, are rejected on the basis of such tests.

If you want to practise for the intelligence type tests, then familiarise yourself with the various books on IQ testing; if you fall one of the other type, then take your talents to a firm that deserves them. Computing needs you.

## REFERENCES

1. Job Trends In Data Processing (1976) by P. Hansen and G. Penney. NCC Publications, £8.00.
2. Manpower with Computer-Related Skills in the UK 1979-1985. Institute of Manpower Studies, February, 1980.
3. Data Processing Staff Selection — A Validation Study, by G. Penney and A. J.



4. An Investigation into the Career Structure, Job Content and Vocational Interests of British Data Processing Staff (1970), by E. Weather-
5. A Career In Computing (1970), by G. Penney. Published by Input Two-Nine.

Lazzerini, NCC Publications (1979), £5.00.

ley, S. Blinkhorn, G. Penney and D. Simpson. NCC Publications, £5.00.

# Services on growth path

● From page 38

edge over the non-graduate salesman in this area.

Research and development obviously offer considerable scope for the employment of graduates. They will be required to initiate products and ideas, design and develop systems, prepare functional and systems specifications for customers' needs choosing appropriate means of processing, input, output and communications.

Programming and systems analysts obviously again offer excellent careers for young graduates. The work would involve planning, structuring and developing the programs according to design specifications, or the design and specification of systems. Work has to be done to tight deadlines and cost control procedures because as service companies are relatively small, they have to keep their costs down.

Implementation management. Graduates are also employed in this area, which involves planning, organising and managing the effective implementation of computer projects.

## Attractive

Computer consultants are almost exclusively graduates or have some equivalent professional qualification. They provide professional advice to users on technical or management topics related to computers.

To become a consultant, senior consultant, managing consultant and head of consultancy is one of the more attractive of the career paths offered by computer service companies. The larger software houses and the larger bureaux both offer consultancy career paths of this type. In addition, the specialist computer consultancies concentrate solely on this type of work.

Graduates are not greatly involved in operations in computer service companies — the trainee operator normally comes straight from school with GCE

or else from a TOPS or similar course. However, the control of complex systems and network configuration does involve the employment of some top-level technical graduates who have come up through the systems programming career path.

Having described the opportunities for graduates, it is important to point out the types of graduates that are needed by computer service companies. Because the industry is young and progressive it is particularly unusual in that it can offer equal opportunity to intelligent young people of all educational backgrounds. Arts, economics and science graduates are at no disadvantage with mathematicians and engineers.

## Environments

Nevertheless, many groups such as computer scientists, electronic engineers and accountants will find opportunities for using their academic training directly from the first day they enter the industry. All groups will derive satisfaction at the speed with which they will learn and employ new skills and knowledge.

Prospective employers in the service industry range from divisions of large national corporations to small private companies and they provide a broad spectrum of environments in which the newcomer to the industry can choose to work.

Careers officers should know about the CSA and its members. All final year undergraduates are advised to look out for CSA computer service companies on their visits to colleges and universities. It is also quite acceptable to write directly to some of the companies whose names are well known or whose activities have received publicity which interests the potential employee.

● The CSA publishes a list of member companies that are looking for graduates. A copy can be obtained from: Computing Services Association, 5th Floor, Hanover House, 73-74 High Holborn, London WC1V 6LE.

# Computer Operations Professionals

**STOP**

Entry point to the most exciting computer operations environment in Europe

CHIEF OPERATOR  
SHIFT OPERATOR  
SYSTEMS OPERATOR  
PERIPHERALS OPERATOR  
TAPE LIBRARIAN  
KEY PUNCH OPERATOR

**REAL**



## Leicestershire

## WE DON'T WANT PROGRAMMERS

who lack the initiative and drive necessary to develop our online, real-time database systems

We do want to offer experienced and ambitious COBOL programmers the following opportunities to obtain career development, greater variety and job satisfaction:

**CHIEF PROGRAMMER (To £9,000)**  
**LEAD PROGRAMMER (To £7,000)**

We have a very wide range of hardware and applications based on a 2MB UNIVAC 1100 with large terminal network.

You would benefit from:

- Flexible hours and good working environment.
- Assistance with relocation expenses.
- Extensive social and sports facilities.
- Comprehensive training scheme.

Details and application forms from:  
David Taylor, Computer Section  
County Hall, Glenfield, Leicester  
Telephone 0533 871313, Ext. 7135

134309

**ANALYSTS, PROGRAMMERS, OPERATORS—MAINFRAME & VRC**

with 6 months+ on-site experience.  
Interesting Senior and Junior positions.  
Salaries to £12K

Contact the specialist on 363 5646  
**SYSTEM OPERATOR SERVICES**  
4 Ludgate Circus, London, EC4

137290

**SENIOR ANALYST PROGRAMMER**

Playtex Limited, operating from their U.K. headquarters at Port Glasgow, manufacture a wide range of branded personal and family products for the U.K. and European markets.

The O.P. function requires an additional Senior Analyst/Programmer who will be part of a small team providing D.P. support to all areas of the company. Some European travel may be involved.

The current equipment consists of an IBM System 3/160 with 128K for batch processing and a System 34 for on-line processing with local and remote terminals. Future plans include the installation of an IBM System 38 for which the database design work is underway.

Applicants should have a minimum of two years' experience using RPG-11 coupled with a knowledge of IBM System 3 and 34, preferably in a commercial environment.

Applications in writing to:

J. H. Boyle  
Industrial Relations Manager  
PLAYTEX LIMITED  
Industrial Estate  
Port Glasgow

0799

playtex  
LIMITED

**SYSTEMS ANALYST/PROGRAMMER**

Required by

Abingdon  
carpets, limited

We have a vacancy for a person who has the following experience:

- at least two years' practical systems analyst experience
- programming experience in COBOL
- practical experience of implementing commercial systems
- experience of data preparation systems, mainframe operating systems and application end-to-end, to a limited extent, personnel management.

Salary according to age and experience.

Apply, in the first instance, to: Jane Barclay on Abingdon (0235) 27515  
**Abingdon Carpets Limited**  
5 Nuffield Way, Abingdon, Oxon.

02359

**HOLLAND & UK VIA I.A.**

Industrial Artists has more challenging and rewarding positions on offer, both on its own staff AND ALSO on the permanent staff of its many clients. A selection from the most urgent of these comprises:

**FOR HOLLAND, within the I.A. team but, based on the client's premises:**  
**4300 SERIES COBOL PROGRAMMER** with at least 3 years experience for a QDS/VE environment using DLI — applicants having 158/168 experience will be seriously considered.

**VM 370 COBOL PROGRAMMER** with at least 3 years experience, for an OS environment. Knowledge of CMS/FS/DMS & VSAM would be of distinct advantage and, any systems programming experience would be useful.

**YOUNG TECHNICIANS** (aged 20 to 25) having a good electronics background preferably to Degree (or close equivalent) standard, to TRAIN AS INSTRUCTORS over 1 to 2 years with a manufacturer of mini-computers. Previous computer knowledge and/or experience is not sought in total but, that of DIGITAL TECHNIQUES and some of the BASIC language will be looked for.

**TECHNICAL AUTHORS** possessing at least 3 years experience of HARDWARE ASPECTS OF PRIVATE TELEPHONE EXCHANGES. Must understand digital techniques and micro-processor applications. Knowledge of dedicated systems & processing principles is desirable. Coverage of a manual to be written is hardware oriented, both for total and sub-systems and their installation, maintenance and servicing — and for a new equipment for 50/600 subscribers.

**3031 (or 168/188) PL/I PROGRAMMERS** having at least 3 years experience, including IMS and TSO, for an OS/VS environment end, preferably, with knowledge of SOCIAL INSURANCE and/or TIME REGISTRATION applications. **HONEYWELL BULL L84 & L88 ANALYSTS & PROGRAMMERS** with a sound knowledge of COBOL, DMS & IDS/DS.

**SYSTEMS PROGRAMMER** with a first-class Assembler background and, preferably, a knowledge of SIEMENS 582000 and CSAM for an immediate (or close to) start.

For the above positions excellent salaries are on offer, including generous concessions negotiated with the Dutch taxation authority, four weeks paid holiday per annum, paid national holidays and certified sick leave, a holiday bonus plus the full support of the administrative staff based in our Dutch offices.

**MANAGER FOR SYSTEM DEVELOPMENT DEPARTMENT** will hold responsibility jointly for total policy and completely for supervision of circa 175 staff engaged in development and maintenance of applications programs. Must be a proven manager who, although not a specialist, nevertheless has a reasonable degree of computer knowledge and experience. An academic or equivalent education is looked for and ability to elicit speak Dutch, or learn quickly, is mandatory. Basic salary package negotiable to Guilder equivalent of £21,000. Home location is Utrecht — and is a 'client permanent staff' position.

IN UK and for our clients' permanent staff:

**1 DEC PDP 11/40 PROGRAMMER** with minimum 1 year using BASIC+.

Location: Bournemouth. Salary: £8000

**2 SYSTEMS PROGRAMMER** with minimum 2 years Assembler. Salary: £9000

SYSTEMS ANALYST having 5 years experience and previous 2 years in programming is also held. Knowledge of Lita Assurance application will be preferred. Salary: £78000

**SENIOR OPERATOR** with 2/3 years experience, plus the ability to write JCL. Salary: £58000

Positions are for a 30/31 environment under QDS/VS with CICS. Relocation allowances are available, plus subsidised mortgage facilities. Location: Bournemouth.

**3 SYSTEMS ANALYST/PROGRAMMER** for a SYSTEM 34 environment, with minimum two years RPG 11. Installation is new and the system has to be set up. Possibility of promotion to DP Manager within nine months. Travel to overseas locations may occur. Location: Maidenhead. Salary: £9500 plus bonus.

**4 TWO PROGRAMMING TEAM LEADERS** with minimum 4 years experience. First required for 1903 PLAN-TO-COBOL conversion and second for systems development. Salary: between £7,500/8000 with January review.

**SENIOR PROGRAMMER** with 2/4 years experience. Salary: £8500 with June review.

**PROGRAMMER** with 1/2 years experience. Salary: £5700

Hardware 2860 under VME/B and COBOL. Some Fortran knowledge would be advantageous.

40 hour week with B.15am start. Relocation costs available to households. Location: Southampton

**5 TECHNICAL SUPPORT CO-ORDINATOR** with strong operating systems background, including some TP. Salary: minimum £3500

**SENIOR SYSTEM ANALYST** with minimum 4 years experience, preferably in manufacturing area. Salary: £2800

**SENIOR PROGRAMMER** with minimum 3 years COBOL plus good TP. Salary: £2700

Hardware 2 x 2860's under VME/B plus QG mini network.

Location: Basingstoke. Relocation allowance possibilities.

**6 TWO SYSTEMS ANALYSTS** — first with project control, DB/TP experience and professional qualifications. Second with expertise to help sell the time-sharing service.

Salaries: between £8/9000 Relocation allowance possibilities.

Hardware Honeywell L88 — with training if required. No programming involved. Location: Winchester.

**7 TWO SYSTEMS PROGRAMMERS** with minimum 3 years experience. In one case, IBM background required, but Univac training will be given. Salary: £9000 max.

Hardware Univac 1100/62 with OS 1100 & TIP

Location: Gairloch area

**8 SOFTWARE AUTHOR** with minimum 2 years writing, for commercial business applications (office automation) work. Software engineering background covering either Operating Systems, Compilers, Communications, Business or Laboratory applications is essential. A Programmer, Analyst or Instructor having a proven command of written English could be considered.

Location: Reading. Salary: £8/9000 upwards.

**9 PLEASE WRITE OR TELEPHONE NOW:**

Ann Arledge  
Marketing and Recruitment Director  
Industrial Artists Limited  
21 Barnhill, Hitchin,  
Herts SG5 5JW

Tel: (0462) 82741/2/3 or (0438) 727852 (Eve/Weekends)

IA is a registered Employment Business licensed by O.E.

**Tonka Toys**

IBM SYSTEM/34  
Honeywell-Thomex  
FRANCE 10M 6200  
BELGIUM 10M 6200  
GERMANY 10M 6200

**EUROPEAN SYSTEM CONTROLLER**  
Immigration Package £10,000

The TONKA EUROPEAN CONTROLLER is transferring all his responsibilities from Belgium to Honeywell-Thomex. An IBM SYSTEM/34 is to be transferred to Honeywell-Thomex in Spring 1981. An IBM SYSTEM/34 is to be transferred to Honeywell-Thomex in Spring 1981. An IBM SYSTEM/34 is to be transferred to Honeywell-Thomex in Spring 1981.

— Continued from page 1 —  
— Planning and execution of the transfer of the computer to the new location of the IBM SYSTEM/34 in France, Belgium, Germany, etc.

— Continued from page 1 —  
— Planning and execution of the transfer of the computer to the new location of the IBM SYSTEM/34 in France, Belgium, Germany, etc.

— Continued from page 1 —  
— Planning and execution of the transfer of the computer to the new location of the IBM SYSTEM/34 in France, Belgium, Germany, etc.

— Continued from page 1 —  
— Planning and execution of the transfer of the computer to the new location of the IBM SYSTEM/34 in France, Belgium, Germany, etc.

— Continued from page 1 —  
— Planning and execution of the transfer of the computer to the new location of the IBM SYSTEM/34 in France, Belgium, Germany, etc.

— Continued from page 1 —  
— Planning and execution of the transfer of the computer to the new location of the IBM SYSTEM/34 in France, Belgium, Germany, etc.

— Continued from page 1 —  
— Planning and execution of the transfer of the computer to the new location of the IBM SYSTEM/34 in France, Belgium, Germany, etc.

— Continued from page 1 —  
— Planning and execution of the transfer of the computer to the new location of the IBM SYSTEM/34 in France, Belgium, Germany, etc.

— Continued from page 1 —  
— Planning and execution of the transfer of the computer to the new location of the IBM SYSTEM/34 in France, Belgium, Germany, etc.

— Continued from page 1 —  
— Planning and execution of the transfer of the computer to the new location of the IBM SYSTEM/34 in France, Belgium, Germany, etc.

— Continued from page 1 —  
— Planning and execution of the transfer of the computer to the new location of the IBM SYSTEM/34 in France, Belgium, Germany, etc.

— Continued from page 1 —  
— Planning and execution of the transfer of the computer to the new location of the IBM SYSTEM/34 in France, Belgium, Germany, etc.

— Continued from page 1 —  
— Planning and execution of the transfer of the computer to the new location of the IBM SYSTEM/34 in France, Belgium, Germany, etc.

— Continued from page 1 —  
— Planning and execution of the transfer of the computer to the new location of the IBM SYSTEM/34 in France, Belgium, Germany, etc.

— Continued from page 1 —  
— Planning and execution of the transfer of the computer to the new location of the IBM SYSTEM/34 in France, Belgium, Germany, etc.

— Continued from page 1 —  
— Planning and execution of the transfer of the computer to the new location of the IBM SYSTEM/34 in France, Belgium, Germany, etc.

— Continued from page 1 —  
— Planning and execution of the transfer of the computer to the new location of the IBM SYSTEM/34 in France, Belgium, Germany, etc.

— Continued from page 1 —  
— Planning and execution of the transfer of the computer to the new location of the IBM SYSTEM/34 in France, Belgium, Germany, etc.

— Continued from page 1 —  
— Planning and execution of the transfer of the computer to the new location of the IBM SYSTEM/34 in France, Belgium, Germany, etc.

— Continued from page 1 —  
— Planning and execution of the transfer of the computer to the new location of the IBM SYSTEM/34 in France, Belgium, Germany, etc.

— Continued from page 1 —  
— Planning and execution of the transfer of the computer to the new location of the IBM SYSTEM/34 in France, Belgium, Germany, etc.

— Continued from page 1 —  
— Planning and execution of the transfer of the computer to the new location of the IBM SYSTEM/34 in France, Belgium, Germany, etc.

— Continued from page 1 —  
— Planning and execution of the transfer of the computer to the new location of the IBM SYSTEM/34 in France, Belgium, Germany, etc.

— Continued from page 1 —  
— Planning and execution of the transfer of the computer to the new location of the IBM SYSTEM/34 in France, Belgium, Germany, etc.

— Continued from page 1 —  
— Planning and execution of the transfer of the computer to the new location of the IBM SYSTEM/34 in France, Belgium, Germany, etc.

— Continued from page 1 —  
— Planning and execution of the transfer of the computer to the new location of the IBM SYSTEM/34 in France, Belgium, Germany, etc.

# What do we program—machines or people?

"OUR bureau provides you with state-of-the-art technology and with unique features to solve your problems." I parody a statement which might appear in any brochure or publication advertising any computer installation. In terms of machines, that advert could be true.

But a bureau doesn't just provide a machine service; it provides a combination of machinery and people in order to help clients with their work.

If I, now an outsider to the industry, buy a system from a manufacturer, I have also to buy skilled people in order to be able to bind the two and make a successful operation.

The question I would like to pose to the readers of Computer Weekly is whether they apply the same resources to managing the people side of their operation as they do to managing the system side of their operation.

If salary costs amount to 30% of your budget, and machine costs represent 40% of your budget then is the people to systems management cost ratio to the same proportion of 3 to 4?

## Objective

In an industry that is growing fast, and where a great deal of effort is needed to keep up with the technology, it is easy to forget the objective of management.

Management is about achieving better results through people. Since the quality of the output

of individual people is probably the biggest limiting factor of the industry's growth then the successful user is going to spend as much time and effort in developing its people as in developing its machinery.

At this point we ought to distinguish between a person's technical skills and his management skills. Anyone of experience in the computer industry knows of the example of the brilliant programmer who, when made the programming manager, finds himself out of his depth.

In an industry where the level of intelligence is above average, there is probably plenty of intellectual power available. The poor programming manager is facing problems which probably have a different method of analysis and for which he has had no instruction about possible solutions.

## Failure

The computer industry now has a wide range of techniques available for selecting people at the bottom — such as data preparation clerks and computer operators — in order to check their ability to understand the technology and to be numerate.

It also has an effective method of selection at the top since success at this level can be measured easily by numbers with a pound sign in front at the end of the year. The question I have posed above refers most accurately to first and second line management.

Are computer shift leaders or

date prep managers selected and trained for their ability to understand the technology or to understand the people? After all it is their job to get the whole service presented properly to the customer, not simply to present the accuracy of the system.

If you are asked whether or not there is anything in this for your particular installation, simply ask yourself one more question: In your installation in the last three months has there been a failure or

actually give our first line management some straightforward guidance in how to get the best out of their people?

## Independent

The Industrial Society is an independent organisation which has, over the last 10 years, developed and run training in the involvement of people in a wide range of industries. It is self-financing and in the last year earned £3.6 million

So often as I go round, computer-people identify us being "ICL men" or "IBM men" or whatever, identifying with the manufacturer of the machinery rather than the organisation that runs them.

## Pride

Somewhat the structure and team groups and accountability within the organisation doesn't allow the normal pride of belonging to a successful firm to show through. The danger in this is whether, when the chips are down, the individual people will react more to the machinery rather than to the organisation. Does their loyalty lie with themselves, the manufacturer, or the organisation that actually pays their salaries?

There is a strong case to be made for the management services division being set up as a separate profit centre so that the computer is looked on as a profitable capital investment rather than on expensive overhead.

However, with so much of a firm's business dependant upon the successful operation of the computer division there is also a very strong case to be made for making certain that everybody in the computer division feels involved with the parent.

Computer managers not only have the right to communicate about company matters; they have the duty to communicate. After all, if the parent runs into difficult times, that may well affect the jobs of the individual people in the computer division just as much as in any other division.

by David Fleming

mistake of somebody to fulfil the job that was expected of them which has cost a significant amount of money?

If the answer is "no" then there is no point in your reading this article any further.

If the answer is "yes" then we have to reflect on the fact that the majority of people in management positions in the industry have not come from a background where leadership has been taught or demonstrated.

Ten years ago that word "leadership" did not enter into the vocabulary of educators or trainers. But in the last few years the realisation has grown that the management of people is all about leadership. It is not just leadership at the top.

You can run a war for weeks without the generals but it comes to a grinding halt within five minutes without the corporal. Do we

in training over 40,000 people in leadership.

The form of training that the society undertakes is based on a straightforward, practical and reproducible method which concentrates on what managers and leaders have to do in order to be effective.

Most of the training courses run are no more than three days' duration and the advisory staff have themselves been line managers. The society has a range of courses available for computer shift leaders, data preparation supervisors, computer managers and data processing managers.

Anyone like me who has worked in the computer industry knows that the involvement of people is not simply about what the manager does. It is also about whether the organisation allows its junior staff to feel that they are part of the organisation.

DAVID FLEMING has responsibility for the computer services department of the Industrial Society. He asks if we are in the business of programming machines or people.

Fleming joined the society 20 months ago after a computer career with a major food group. He specialises in training and advice for senior management.

It may sound from the society's title that its main effort has been directed towards factories. It is true the society's origins were in factory premises where it started 60 years ago trying to get people who organised work in care about people.

But increasingly as the service sector of the economy grows, the society's work has been recognised in virtually every sector.

Over 15,000 firms are now in membership and these include most of the major firms in the country including the major computer manufacturers.

## Divisive

Its independence is guaranteed by its council, which consists of employers and trade unionists, but its overall objective of promoting the involvement of people is best illustrated by its work in trying to promote a sense of common purpose in all that we do.

Too often management and staff are subjected to divisive forces — especially from those outside industry and commerce — and it is an all too human ability to see difficulties rather than solutions to these pressures.

By concentrating on positive, unifying, and creative strengths that do exist in our organisations we can make sure that we make more productive and more profitable contribution to the benefit of both machines and people.

# COMPUTER PROFESSIONALS



## New Job-New Town-New House

General Motors is one of the largest most forward-looking manufacturing concerns in the world. And our spacious, new headquarters and Distribution Centre at Milton Keynes can offer you a quality of life that would be hard to beat.

In the heart of the North Bucks countryside, Milton Keynes is a town built with people in mind. A place where you can enjoy an unrivalled variety of amenities and facilities, and where it is possible to obtain a beautiful new home in no time at all.

### Our Installation

You will have the opportunity to work on mini and micro-computers plus such powerful hardware as an IBM 3033 and an IBM 370/168 with a total of 14 megabytes with MVS, IMS and TSO with link-up to our national network.

### The Positions

**Project Managers.**  
**Systems Analysts.**  
**Computer Operations Staff.**  
**Senior Technical/Applications Programmers.**  
**Data Base Specialists.**  
**Data Preparation Operators.**

All the above positions are only for experienced personnel who can make an immediate contribution to the running of the new installation.

### The Rewards

We offer a range of salaries between £8,000 and £10,000 with a review operative from November 1st, plus paid overtime at premium rates. In addition there are genuine promotion prospects together with a fringe benefit package which includes generous relocation expenses and concessions on buying or renting GM cars.

### Housing

Throughout Milton Keynes and surrounding areas, a wide variety of new homes are either ready to move into or are nearing completion. They range from one bedroom flats to four bedroom houses, and should you be successful in obtaining employment with GM you can then be considered for one of them. Whether you wish to rent or buy, the formalities are usually dealt with in no time at all.

With interesting and challenging projects ranging from energy management to a worldwide GM purchasing system, these must be some of the most exciting D.P. opportunities in British industry today. But don't make up your mind now. Come along and check it out over a drink at one of the informal interviews listed here.

It's your first step to getting more out of life and being part of tomorrow's technology today.

If you can't know more, write to or telephone Roy Picher at:

General Motors Limited, 549, Silbury Boulevard, Central Milton Keynes, MK9 3EL.  
Tel: Milton Keynes (0908) 679141 or 679211

## Informal Interviews

**LEIGHTON BUZZARD**  
Wednesday 29th & Thursday 30th October  
5pm-9.00pm, The Swan Hotel,  
Market Square, Leighton Buzzard.

**BEDFORD**  
Thursday 30th & Friday 31st October  
5pm-9.00pm, Bedford Swan Hotel,  
The Embankment, Bedford.

**NORTHAMPTON**  
Thursday 30th & Friday 31st October  
6pm-9.00pm, Saxon Inn Motor Hotel,  
Silverstreet, Northampton.

**CENTRAL MILTON KEYNES**  
Saturday 1st November  
10am-3pm, General Motors Limited,  
Civic Centre, (Opposite Shopping Centre).

**LUTON**  
Monday 3rd & Tuesday 4th November  
5pm-9.00pm, Hertfordshire Mead House,  
Walling Street, Markyate, Herts.

**NEWPORT PAGNELL**  
Monday 3rd & Tuesday 4th November  
5pm-9.00pm, Swan Revived Hotel,  
High Street, Newport Pagnell.



**SENIOR PROGRAMMER****HOLLAND****c.£11,400+**

This international company requires an experienced and versatile Cobol programmer to join its EDP centre in Holland.

You will be developing new systems for the company in Holland, joining a small but expert team of British expatriates at a senior level.

For this position you will need around 3 years' Cobol experience and a good knowledge of CICS/VS, preferably gained in a DOS/VS environment.

Benefits include an annual bonus and a generous holiday allowance paid in addition to holiday pay.

The attractive benefits package includes a method of payment geared to take full advantage of the Dutch tax laws.

For further details please call Jeff Rubbert quoting:

REF. A/5380

**DEVELOPMENT MANAGER****MIDDLESEX****c.£12,000+CAR**

A prestigious client based in South Middlesex have recently created an applications development division.

This has created a new position for a Development Manager which would suit an existing Systems Manager, Project Manager or similar.

The successful applicant will manage a large team of Analysts and programmers to work on the development of bespoke software for clients in the U.K. and Europe.

Ideally you should have sound commercial analysis and programming experience preferably including COBOL and at least one other language. Previous managerial or supervisory experience would be an asset.

In addition to the excellent salary the company offer a car and other excellent benefits.

For full details please contact MARK MELLISH quoting:

REF. M/5351

**TECHNICAL SUPPORT PROGRAMMER****LONDON****To £8,000 p.a.**

The position involves responsibility for the successful support and production of programs and documentation on systems assigned Legal Accounts and Packages.

The ability to communicate with staff at all levels, to fully understand requirements and produce efficient programs written to agreed standards and schedules and where necessary is of fundamental importance. Candidates for this post should have at least 12 MONTHS Basic + programming in a commercial or financial environment with experience on DEC PDP 11 equipment using RSTS operating system.

Company benefits include Free Life Assurance, Pension Scheme. Subsidised Restaurant and 20 days holiday

REF. 15361

**ABRAXAS**

(Computer Employment Limited)

**357 Euston Road London NW1 3AL****01-388 0111 (24 Hours)**

Licence No. SE(A)3839

PERMANENT RECRUITMENT CONTRACT SUPPORT DATA PREPARATION

**CONSULTANT COMPUTER PROGRAMMERS****STARTING CIRCA £15K**

Immediate vacancies for LONDON client

Applicants must have:  
3 years' COBOL experience  
Excellent Communicative Skills  
Self-motivation

This is an excellent opportunity for successful applicants.

Telephone, in first instance:

**01-588 2211**

or write to: **BMW PERSONNEL CONSULTANTS**  
479 HIGH ROAD, LEYTONSTONE, E.11

**PORTSMOUTH POLYTECHNIC**

Computing Centre

**SENIOR PROGRAMMER**

Post No. 772

The Computing Centre operates an ICL 2980 under VME/K and an ICL 2804 under MINIMAC for general college use and a PDP 11-40 for Computer Science students. Applicants should preferably be graduates and have substantial programming experience on a large mainframe computer.

Salary Scale:

S02/P01(2-4)

£7,287 to £8,328

Application form and further details are available from Staff Office, Portsmouth Polytechnic, Alexandra House, Museum Road, Portsmouth or by telephoning Portsmouth 27651, ext. 317 and returned by 7th November, 1980.

(222)

**COMPUTER SERVICE ENGINEERS**

Dicoll Electronics Limited are leading manufacturers of microcomputer based products.

Continued expansion has created vacancies in our Customer Service Department.

We require Field Engineers to repair and maintain our products on customer site, and Internal Engineers to work in our Module repair facility. Preference will be given to qualified engineers experienced in LSI 11 and/or hard disk sub-systems.

**DEVELOPMENT ENGINEER**

To undertake challenging design work on now microcomputer-related products within the Engineering Department. An H.N.C. qualification together with digital design experience is required. Successful applicants could expect to take total individual project responsibility at an early date.

Please write or telephone for an application form to:

**DICOLL**

BASINGSTOKE

Personnel Department

Dicoll Electronics Ltd.

Bond Close

Kingsland Estate

Basingstoke, Hants.

Tel. Basingstoke 61551

**GUIDE TO RECRUITMENT CONSULTANTS IN THE U.K.****LONDON & H. COUNTIES (LH). MIDLANDS (M). NORTH (N). SCOTLAND (S). OVERSEAS (O)****NORTHERN IRELAND****ALL COMPUTER STAFF NEEDS**

- ESCO Management Consultants Ltd.

Professional, reliable, confidential.

Write to: 77 Belsize Avenue, Belfast

BT7 1JL, or phone Belfast (0232) 4008

(2082)

**Computer Professional Recruitment Consultants**

"COMPUTER PROFESSIONALS - MAKE SURE WE HAVE YOU IN MIND"

Local Office: 0932 714000

Tel: 0932 714000

Tel: 0932 714000

Tel: 0932 714000

Tel: 0932 714000

Tel: 0932 714000

Tel: 0932 714000

Tel: 0932 714000

Tel: 0932 714000

**Ivor Norton Management Services Ltd**

Recruitment Consulting Division

62 Shaftesbury Avenue, London W1V 7JG

01-734 8882 (24 hours answering service)

P.O. Box 63, Connaught Square House,

Harcourt Road, London W1P 9JL. Tel: Harcourt 6652

**FOR CLIENTS AND APPLICANTS IN UK AND OVERSEAS**

Alex Daily

COMPUTER STAFF APPOINTMENTS

134 St. Vincent St., Glasgow

041-221 4166/9

Also in Edinburgh and Newcastle

**COMPUTER INDUSTRY SPECIALISTS**

SALES • SYSTEMS • MARKETING • ENGINEERING • PROGRAMMING

INSIGHT MARKETING &amp; PERSONNEL CONSULTANTS LTD.

AUSTIN HOUSE, CHARLOTTE STREET, MANCHESTER. TEL. 061-234 7026

**FOR THE BEST PERMANENT AND CONTRACT JOBS IN THE NORTH OF ENGLAND**

Wanda Appleton

14 The Quadrant

14 The Quadrant

14 The Quadrant

14 The Quadrant

14 The Quadrant

**ALL COMPUTER STAFF NEEDS**

ESCO MANAGEMENT CONSULTANTS LIMITED

77 Shaftesbury Avenue

London W1V 7JG

Tel: Shaftesbury 45088

Tel: Shaftesbury 45088

Tel: Shaftesbury 45088

**D.P. Permanent & Temporary Recruitment**

MANCHESTER LEEDS

Maureen A. Ingle John Kivington

Tel: 061-238 7030 Tel: 0632-448025

Tel: 0632-448025

Tel: 0632-448025

Tel: 0632-448025

**FOR FURTHER DETAILS OF THIS WEEKLY FEATURE CONTACT OWEN KELLY**

061-372 8861

**MAJOR ACCOUNTS! SENIOR SALES EXECUTIVES****ON TARGET £20,000****2-LITRE CAR**

Major US Mini Computer manufacturer who have been:

ESTABLISHED SINCE 1973  
(IN U.K.)

With a GROWTH RATE 70%  
TURNOVER £30M+

Renowned for POWERFUL AND RELIABLE  
SYSTEMS  
HIGH-CLASS SUPPORT  
PROFESSIONAL APPROACH

They are offering outstanding opportunities with real management prospects to experienced Sales Executives looking for a move up.

Are you a Mature Professional with Solid Sales Achievement in Commercial DP (particularly City applications) looking for a lucrative career move with a Major Force in the Mini Market this could be for you!

Call now Ref. CS1192

**AB EXECUTIVE (Weybridge)**  
**0932 41321-4**

**MYRIAD****Who Else?**

... can offer such a well balanced  
and flexible recruitment package?

If you're in any doubt telephone:

**01-353 0981**  
(24 hours)

**Myriad Appointments Limited**  
30, Fleet Street, London EC4Y 1AA

**How Programmer Frank Franklin switched on to Software Design.**

It's all too easy in programming to get channelled into a narrow career path. Frank Franklin feels fortunate that with IDEC he's been able to considerably broaden his options.

As a development centre for ITT Business Systems, IDEC is an organisation at the peak of technology in the fast expanding field of communications. We are established innovators in advanced microprocessor-based communications systems and the sophisticated software to go with them.

Ours is a fast moving environment. We are growing and diversifying and that creates the kind of career prospects that enable Frank and Programmers like him to get to grips with the technical side of programming in the shortest possible time.

By joining one of our large or small project teams, you'll have the opportunity to become multi-skilled in microprocessor engineering, firmwares, software and systems. The career options are wide open.

There are immediate opportunities for software professionals at all levels to join us. We offer the most comprehensive experience and training available in our industry. Our salaries are attractive, conditions are excellent, career prospects well above average and there are full fringe benefits.

Wherever your interests and abilities lie, you won't be short of opportunity to develop your career with IDEC in any of a number of directions.

If you want to make more of your software experience, turn to IDEC. Just contact Sue Cameron or Chris Turner on Potters Bar (0707) 44137 or 51199, or write to ITT-IDEC, Orchard House, Mutton Lane, Potters Bar, Herts. EN6 3AR.



"I've found I do much more than just programming at IDEC. After just 2 years I have already switched more into software and systems design. You get very wide general experience plus the opportunity to specialise. I can get really involved in the technical aspects of computers and there's scope to go a long way in technical management without getting pre-occupied with administration."

**FRANK FRANKLIN**  
Programmer

**IDEC**  
A Development Centre for  
ITT Business Systems

**ITT**